Final report

OWMC
Ontario Waste Management Corporation
A provincial crown corporation

LEON KENTRIDGE ASSOCIATES LTD

Marshall Macklin Monaghan

SITE SELECTION PROCESS

PHASE 4A: SELECTION OF PREFERRED SITE

Land Use

Leon Kentridge Associates Limited
Sub-consultants:
Marshall Macklin Monaghan Limited
Graydon Rodgers Appraisals Limited

November, 1985

X236-E

LEON KENTRIDGE
ASSOCIATES LIMITED
PLANNING CONSULTANTS

November 19, 1985
84006

Dr. B.D. Mitchell
Ontario Waste Management Corporation
2 Bloor Street West
11th Floor
Toronto, Ontario
M4W 3E2

Dear Mr. Mitchell

Re: Site Selection Process
Phase 4A: Selection of Preferred Site - Land Use

We are pleased to submit our final report for the above noted study.

This report presents our analysis of the land use factors during Phase 4A, our inputs to the Site Selection Team, and to other individual Site Selection Consultants.

Thank you for the opportunity to participate in this process.

Yours very truly

LEON KENTRIDGE ASSOCIATES LIMITED

Leon R Kentridge -

Leon R. Kentridge, MRAIC, MCIP

LRK/cdt

2 BERKELEY STREET SUITE 400
TORONTO, ONTARIO
M5A 2W3 • (416) 364-4144

TABLE OF CONTENTS

Page No.

LETTER OF TRANSMITTAL
EXECUTIVE SUMMARY

1. **INTRODUCTION** 1

Purpose of Report 1
Facilities Development Process 2
Siting Options 4
Site Evaluation Process 6
Areas of Analysis 8
Study Areas 10
Site Selection Goals and Objectives 11
Identification of Factors and Indicators 12
Data Collection Program 13
Refinement of Siting Options 14
Basic Acceptability Analysis 16
Comparative Evaluation of Siting Options 17
Organization of the Report 18

2. **IDENTIFICATION OF FACTORS AND INDICATORS** 20

Introduction 20
Purpose of Factors 22
Factor Identification Process 22
Phase 4A Factors and Indicators 30
Refinement of Phase 4A Factors and Indicators 32

3. **OVERVIEW OF EXISTING ENVIRONMENT** 34

Introduction 34
Description of Candidate Sites 35
Description of Siting Options 46

TABLE OF CONTENTS

		Page No.
4.	**REFINEMENT OF SITE BOUNDARIES**	47
	Introduction	47
	Identification of Factors and Indicators	48
	Data Collection and Analysis	50
	Ranking of Parcel Options	56
5.	**RAIL ACCESS OPTIONS**	58
	Introduction	58
	Step 1 - Constraint Mapping	59
	Step 2 - Comparative Evaluation	61
	Ranking of Rail Access Options	63
6.	**ACCESS ROAD OPTIONS**	71
	Introduction	71
	Part 1 - Preliminary Screening of Access Road Options	72
	Identification of Factors and Indicators	72
	Ranking of Factors, Indicators and Study Areas	74
	Data Collection and Analysis	76
	Ranking of Access Road Options (Preliminary Screening)	89
	Part 2 - Comparative Evaluation of Access Road Options	94
	Identification of Factors and Indicators	94
	Ranking of Factors and Indicators	96
	Data Collection and Analysis	98
	Ranking of Access Road Options	100

TABLE OF CONTENTS

Page No.

7. LOCATION OF PHYSICAL/CHEMICAL TREATMENT PLANT FOR PARTIALLY INTEGRATED SITING OPTIONS 104

Introduction 104
Identification of Factors and Indicators 106
Ranking of Factors and Indicators 109
Data Collection and Analysis 110
Ranking of Location of Physical/Chemical Treatment Plant Options 112

8. COMPARISON OF SITING OPTIONS 115

Introduction 115
Basic Acceptability Analysis 118
Aggregation of Factors and Indicators 119
Review of Major Issues and Trade-offs 128
Final Ranking of Siting Options 132
Sensitivity Analyses 140
Construction Impacts 143
Future Scenarios 143
Conclusions 145

Glossary of Terms
List of References
List of Map References
Appendices

LIST OF FIGURES

Figure		Page No.
1.1	Facilities Development Process	3
1.2	Phase 4A Site Selection Process - Land Use	5
3.1	Candidate Site LF-2N - Existing Land Use	34
3.2	Candidate Site LF-2N - Planning Status	34
3.3	Candidate Site LF-4N - Existing Land Use	36
3.4	Candidate Site LF-4N - Planning Status	36
3.5	Candidate Site PI-1N - Existing Land Use	37
3.6	Candidate Site PI-1N - Planning Status	37
3.7	Candidate Site PI-13N - Existing Land Use	39
3.8	Candidate Site PI-13N - Planning Status	39
3.9	Candidate Site LF-3C - Existing Land Use	40
3.10	Candidate Site LF-3C - Planning Status	40
3.11	Candidate Site LF-9C - Existing Land Use	41
3.12	Candidate Site LF-9C - Planning Status	41
3.13	Candidate Site LF-1E - Existing Land Use	42
3.14	Candidate Site LF-1E - Planning Status	42
3.15	Candidate Site PI-27E - Existing Land Use	44
3.16	Candidate Site PI-27E - Planning Status	44
4.1	PI-1N - Refinement of Site Boundaries	52
4.2	LF-3C - Refinement of Site Boundaries	54
4.3	LF-1E - Refinement of Site Boundaries	55
5.1	LF-4N - Rail Access	65
5.2	P1-1N - Rail Access	66
5.3	LF-3C - Rail Access	67
5.4	LF-9C - Rail Access	68
5.5	LF-1E - Rail Access	69

LIST OF FIGURES

Figure		Page No.
6.1	LF-3C - Phase 4A Access Roads	78
6.2	LF-9C - Phase 4A Access Roads	79
6.3	LF-1E - Phase 4A Access Roads	80
6.4	LF-2N/PI-1N To PI-1N - Phase 4A Access Roads	81
6.5	LF-2N/PI-1N PI-1N To LF-2N - Phase 4A Access Roads	82
6.6	LF-2N/PI-13N To PI-13N - Phase 4A Access Roads	83
6.7	LF-2N/PI-13N PI-13N To LF-2N - Phase 4A Access Roads	84
6.8	LF-4N/PI-1N To LF-4N - Phase 4A Access Roads	85
6.9	LF-4N/PI-1N PI-1N To LF-4N - Phase 4A Access Roads	86
6.10	LF-1E/PI-27E To PI-27E - Phase 4A Access Roads	87
6.11	LF-1E/PI-27E PI-27E To LF-1E Phase 4A Access Roads	88
7.1	Schematic of Partially Integrated Siting Options	105

LIST OF TABLES

Table		Page No.
2.1	Factors Used in the Refinement and Comparison of Siting Options	19
2.2	Relationship of Phase 4A Factors/Indicators to Land Use Objectives - Summary Matrix	24
2.3	Relevant Facility Characteristics Assumptions	28
4.1	Phase 4A - Refinement of Site Boundaries Ranking of Factors and Indicators	49
4.2	Phase 4A - Refinement of Site Boundaries Ranking of Parcel Options	56
5.1	Ranking of Factors - Comparative Evaluation of Rail Access Options	62
5.2	Phase 4A - Comparative Evaluation of Rail Access Options, Summary of Ranking	64
6.1	Phase 4A - Preliminary Screening of Access Road Options, Screening of Factors and Indicators	73
6.2	Phase 4A - Preliminary Screening of Access Road Options, Identification of Factors and Indicators	74
6.3	Phase 4A - Preliminary Screening of Access Road Options Ranking of Factors and Indicators	75
6.4	Phase 4A - Preliminary Access Road Screening, Summary of Scaling	77
6.5	Phase 4A - Preliminary Screening of Access Road Options, Summary of Ranking	89
6.6	Phase 4A - Comparative Evaluation of Access Road Options, Screening of Factors and Indicators	95
6.7	Phase 4A - Comparative Evaluation of Access Road Options, Identification of Factors and Indicators	96

LIST OF TABLES
(Continued)

Table		Page No.
6.8	Phase 4A - Comparative Evaluation of Access Road Options, Ranking of Indicators	97
6.9	Phase 4A - Comparative Evaluation of Access Road Options, Summary of Ranking	100
7.1	Phase 4A - Location of Physical/Chemical Treatment Plant for Partially Integrated Siting Options, Identification of Factors and Indicators	108
7.2	Phase 4A - Location of Physical/Chemical Plant for Partially Integrated Siting Options, Summary of Ranking of Factors and Indicators	110
7.3	Phase 4A - Location of Physical/Chemical Treatment Plant for Partially Integrated Siting Options, Summary of Ranking of Options	112
8.1	Preliminary Ranking of Siting Options	125
8.2	Suitability Ratings by Factor	126
8.3	Suitability Ratings by Study Area	127
8.4	Identification of Major Land Use Issues	128
8.5	Final Ranking of Siting Options	133

LIST OF APPENDICES

Appendix

A. Appendix to Chapter 1

Table A.1 - Data Inputs To/From Other Consultants

B. Appendices to Chapter 2

Table B.1 - Phase 4A Factors and Indicators
Table B.3 - Relationship of Phase 4A Factors to Phase 3B Factors

C. Appendices to Chapter 3

Table C.1 - Candidate Site Data Matrices Prior to Boundary Refinement - Site LF-2N
Table C.2 - Candidate Site Data Matrices Prior to Boundary Refinement - Site PI-1N
Table C.3 - Candidate Site Data Matrices Prior to Boundary Refinement - Site LF-3C
Table C.4 - Candidate Site Data Matrices Prior to Boundary Refinement - Site LF-1E

D. Appendix to Chapter 4

Table D.1 - Phase 4A Refinement of Site Boundaries - Data Matrices

E. Appendix to Chapter 5

Table E.1 - Phase 4A - Rail Access Options - Data Matrices

F. Appendices to Chapter 6

Table F.1 - Phase 4A - Preliminary Access Road Options
Table F.2 - Phase 4A - Preliminary Access Roads - Data Matrices
Table F.3 - Siting Option Data Profiles - Access Roads Added in Phase 4A
Table F.4 - Phase 4A - Comparative Evaluation of Access Roads - Option Under Consideration
Table F.5 - Phase 4A - Comparative Evaluation of Access Roads - Data Matrices

LIST OF APPENDICES
(continued)

Appendix

G. **Appendix to Chapter 7**

Table G.1 - Phase 4A - Location of Physical/Chemical Treatment Plant for Partially Integrated Siting Options - Data Matrix.

H. **Appendices to Chapter 8**

H.1 - Comparative Evaluation of Siting Options - Screening of Indicators

H.2 - Comparative Evaluation of Siting Options - Ranking and Weighting of Indicators

H.3 - Comparative Evaluation of Siting Options - Scaling of Indicators

- H.3.1 Site Area
- H.3.2 Site Vicinity
- H.3.3 Community and Regional Area
- H.3.4 Access Roads

H.4 - Comparative Evaluation of Siting Options - Summary of Suitability Ratings

- H.4.1 Site Area
- H.4.2 Site Vicinity
- H.4.3 Community and Regional Area
- H.4.4 Access Roads

H.5 - Comparative Evaluation of Siting Options - Aggregation of Indicators

- H.5.1 Site Area
- H.5.2 Site Vicinity
- H.5.3 Community and Regional Area
- H.5.4 Access Roads

H.6 - Comparative Evaluation of Siting Options - Summary of Suitability Ratings by Factor

H.7 - Comparative Evaluation of Siting Options - Ranking and Weighting of Factors

LIST OF APPENDICES
(continued)

Appendix

H.8 - Comparative Evaluation of Siting Options - Data Matrices After Boundary Refinement

  H.8.1 LF3C
  H.8.2 LF9C
  H.8.3 LF1E
  H.8.4 LF4N/PI1N
  H.8.5 LF4N/PI13N
  H.8.6 LF1E/PI27E

I. - Population Projection for Year 2001 for Air Dispersion Model

J. - Planned and Proposed Land Uses: Official Plans (Local and Regional) and Zoning By-laws

EXECUTIVE SUMMARY

PURPOSE OF THE REPORT

The purpose of this report is to document the analysis undertaken by Leon Kentridge Associates Limited and sub-consultants Marshall Macklin Monaghan Limited and Graydon Rodgers Appraisals Limited, as the land use consultant to the Ontario Waste Management Corporation (OWMC) during Phase 4A of the Site Selection Process. This report details the land use analysis undertaken with respect to existing and future land use conditions, its inputs to the analysis of other consultants to OWMC, and as inputs to OWMC's Site Selection Team in the process of selecting a preferred site(s) for the location of OWMC's waste management facilities. This report should be read in conjunction with the Site Selection Process. Phase 4A: Selection of a Preferred Site - Site Selection report prepared by M.M. Dillon Limited, which contains details of the activities and conclusions reached by the Site Selection Team during the process of selecting a preferred site(s).

SCOPE AND METHOD

The land use component of Phase 4A in the site selection process involved the assessment of existing land use conditions, proposed and planned land uses, land use stability and provincial policies and plans as they relate to the eight (8) candidate sites identified in Phase 3B, the lands surrounding the sites, and the access roads leading to the sites. The existing land uses investigated were limited specifically to residential, commercial and industrial; other land uses, including agricultural, community and recreation features, natural features and transportation and utilities, were addressed by other members of the Site Selection Team (page 9).

Planned and proposed land uses were determined from municipal official plans, zoning by-laws and policy statements, augmented by municipal development activity information. Meetings were held with municipal staff to confirm this data.

Land use stability data were derived from provincial assessment information on ownership status, land sales information, and roadside field investigations to assess building quality. These data were assembled to formulate an overall assessment of land use stability surrounding the 8 candidate sites.

Provincial policies and plans pertinent to the land use analysis were limited to the Niagara Escarpment Plan and the Parkway Belt West Plan. These plans were reviewed and discussed with the appropriate provincial agencies.

In addition to these responsibilities, the land use consultant undertook additional investigations which provided data inputs to other consultants on the Site Selection Team (Appendix A.1).

The site evaluation process, which is illustrated in Figure 1.1 (page 3), was the process used by the Site Selection Team to compare the siting options which were made up of the 8 candidate sites. This process consisted of the following steps:

- Identification of Factors and Indicators
- Data Collection and Analysis
- Refinement of Siting Options
- Basic Acceptability Analysis
- Comparison of Siting Options
- Conclusions and Recommendations

Each of these steps is summarized in the sections which follow.

IDENTIFICATION OF FACTORS AND INDICATORS

Factors represent items of consideration to be used in the comparison of siting options. Indicators are specific measures of a factor which permit precise descriptions of potential risks and impacts. The purpose of factors and indicators are:

(i) to define the scope of studies and activities to be undertaken in Phase 4A;

(ii) to be utilized in the refinement and detailed comparison of siting options in the process of selecting a preferred site(s) (page 22).

The land use factors utilized in Phase 4A have been modified from those in Phase 3B to reflect the greater detail of collected data and the modifications resulting from public inputs in the site selection process (p. 13). These factors and indicators are summarized in Table 2.1 on page 21.

The four Land Use Impact factors used during Phase 4A, and the definition and significance of each, are outlined below.

1. Provincial Policies and Plans

   The OWMC facility could conflict with existing Provincial policies and plans. This factor considers the compatibility of the proposed facility with the Niagara Escarpment Plan and the Parkway Belt West Plan which are two plans in the vicinity of, or in the region of, the candidate sites.

2. Existing Land Uses

   OWMC facilities are essentially industrial in nature and will be most compatible with existing heavy industrial uses. The factor addresses the relative degree of compatibility of the proposed facility and existing land uses. The existing land use pattern is studied as well as the number of residences and industrial and commercial facilities on site, in the site vicinity, along access routes and in the community and regional area.

3. Proposed and Planned Land Use

OWMC facilities are also generally compatible with proposed heavy industrial uses. This factor considers the relative degree of land use compatibility of the proposed facility and planned and proposed future residential, commercial and industrial uses. The intent of this factor is to account for the different types and rates of growth planned for each candidate site. The study areas included site, site vicinity, access roads and, where appropriate, the community and regional area.

4. Land Use Stability

Land use stability refers to the continuity of land use over time. This continuity could be disrupted by a significant change in land use. This factor addresses the degree of land use change in the candidate communities based upon land sales, land ownership by absentee owners, trends in land values and building quality. The site and site vicinity study area were considered for all indicators.

The land use factors relate primarily to the second of the three site selection goals identified by OWMC, that is, the minimization of environmental impacts (page 23). The other goals, including the minimization of risk to human health and the minimization of financial costs to OWMC and the people of Ontario, were addressed by other consultants to OWMC.

The relationship of the factors and indicators to the site selection objectives of OWMC are outlined on pages 25-27. The key objectives to which the land use factors were applicable were:

(i) to minimize conflict with existing, committed, proposed and planned land uses;

(ii) to maximize the potential for the establishment of the facility components in locations characterized by similar industrial uses;

(iii) to minimize conflict between the facility components, operations and the use and enjoyment of properties in the vicinity of the site(s), as a result of visual intrusion, noise, etc.

(iv) to maximize conflict with Federal, Provincial and Municipal policies, programs and plans.

DATA COLLECTION AND ANALYSIS

After the identification of appropriate indicators and factors, data were collected under each indicator from both primary and secondary data sources (page 13). Roadside field investigations were used to determine existing land use conditions. Secondary data sources such as municipal planning documents were also used extensively in collecting data on planned and proposed land uses.

REFINEMENT OF SITING OPTIONS

At the completion of Phase 3B, eight candidate sites were identified which were to be subjected to a detailed comparative evaluation in order to identify a preferred site(s). These eight sites were combined, at the end of Phase 3B, for a total of 13 siting options. These siting options were reduced to a total of 9 during Phase 4A, as a result of the decision to eliminate candidate site LF-2N in the City of Mississauga from further consideration due to hydrogeologic conditions which do not provide natural containment (page 6).

During the refinement of siting options step 9 siting options were considered.

The purpose of the refinement of siting options step was, therefore, to compare the various alternatives within each siting option, prior to a final comparison of siting options. Choices remained with respect to the following:

- **Site boundaries.** For 3 sites, LF-1E, LF-3C and PI-1N, the site boundaries were larger than necessary to accommodate all of the proposed facilities. Therefore, the purpose of this analysis was to identify those portions of the site most suitable for the location of the facility. The results of this analysis are outlined in Chapter 4 (page 47).

- **Rail Access Options.** Rail access to each site was considered as a method of transporting additives and reagents to the site in order to minimize the truck traffic to the site. Alternative routes for rail acess were considered for each site, and a preferred route selected. The results of this analysis are outlined in Chapter 5 (page 58).

- **Access Road Options.** At the end of Phase 3B, several alternative access routes were available to serve each site. It was necessary to decide which route would be selected for each siting option. The results of this analysis are outlined in Chapter 6 (page 71).

- **Location of Physical/Chemical Treatment Plant for Partially Integrated Siting Option.** In each partially integrated siting option, the physical/chemical treatment plant could be located at the landfill or with the incinerator. It was therefore necessary to decide which arrangement would be preferable. The results of this analysis are outlined in Chapter 7 (page 104).

BASIC ACCEPTABILITY ANALYSIS

Prior to undertaking the comparative evaluation of the remaining siting options, each consultant undertook an analysis to determine whether any new data emerged during Phase 4A which, on its own, warrants the rejection of any sites or siting options due to the contravention of an essential siting requirements (page 118). It was this analysis which resulted in the rejection by OWMC of site LF-2N due to hydrogeologic conditions which do not provide for natural containment.

The land use consultants concluded that no data had been collected which, on its own, warranted the rejection of any sites or siting options. All sites and siting options were determined to be acceptable from a land use perspective, due primarily to the steps taken in previous phases of the site selection process to exclude lands where severe land use impacts will occur, such as major residential and commercial uses.

COMPARISON OF SITING OPTIONS

At the completion of the refinement of siting options step, 6 siting options remained to be compared in order to identify a preferred site(s). Of the original 13 siting options available at the beginning of Phase 4A, 4 were eliminated as a result of the decision by OWMC to reject site LF-2N due to hydrogeologic conditions which do not permit natural containment. A further 3 siting options were eliminated when decisions were made on the location of the physical treatment plant for partially integrated siting options.

The 6 remaining siting options, therefore, were:

LF-4N/PI-1N
LF-4N/PI-13N
LF-3C
LF-9C
LF-1E
LF-1E/PI-27E

For all 3 partially integrated siting options, it was decided to locate the physical/chemical treatment plant with the incinerator. During the comparative evaluation of the 6 remaining siting options, two analysis techniques were utilized. The first, which was quantitative in nature, was known as Factor/Indicator Aggregation (page 119). This technique involved the expression of indicator data in terms of levels of constraint or suitability. Factor suitability ratings, expressed as numeric values, were then derived for each siting option through the aggregation of indicators, factors and study areas by deriving and assigning weights to indicators and factors.

The suitability ratings for each siting option produced the following ranking of siting options (page 125):

PRELIMINARY RANKING OF SITING OPTIONS

Preferred	LF-1E/PI-27E
	LF-1E
	LF-9C
	LF-3C
	LF-4N/PI-1N
Least Preferred	LF-4N/PI-13N

The second analysis technique was qualitative in nature and was known as Review of Major Issues and Trade-offs (page 128). This method involved a review of the major issues (related to one siting option) and trade-offs (between siting options) to determine whether the preliminary ranking of siting options could be supported. The land use consultants concluded that this ranking of siting options was supported by this analysis, with one exception. Siting option LF-3C (ranked 4th) had been preferred over siting option LF-4N/PI-1N (ranked 5th). It was concluded that, in fact, the advantages and disadvantages of LF-3C and LF-4N/PI-1N offset each other. As a result, the final ranking of siting options was adjusted to read as follows (page 133):

FINAL RANKING OF SITING OPTIONS

Preferred	LF-1E/PI-27E
	LF-1E
	LF-9C
	LF-3C and LF-4N/PI-1N
Least Preferred	LF-4N/PI-13N

The rationale for this ranking is presented on pages 134 to 140. In addition to this analysis, sensitivity analyses were undertaken to determine if this ranking of siting options might change if certain facility characteristics assumptions which were made during the site evaluation process were changed (page 140). These concern the assumption that total solidification of waste will occur prior to placement in the landfill, and that rail access is not used to transport additives and reagents. Also, the question arose as to whether revised site boundaries may be necessary at candidate sites LF-3C and LF-1E. Analyses were conducted to determine if these revised site boundaries would affect the ranking of siting options.

The results of each of these sensitivity analyses was that no change to the final ranking of siting options would occur if any of these assumptions were changed, although the magnitude of preference between siting options may change.

CONCLUSIONS AND RECOMMENDATIONS

In selecting the preferred site(s), the Site Selection Team and OWMC should consider the ranking of siting options presented herein, together with the rankings of other site selection consultants. It is, however, the land use consultant's view that all remaining siting options are acceptable for facility siting.

After considering the recommendations of the Site Selection Team, OWMC selected siting option LF-9C as the preferred siting option. From a land use perspective, this siting option has significant advantages and disadvantages. Impacts on site and on nearby land uses will be minimized because of the low number of residential and commercial land uses. However, the two significant land use constraints associated with this siting option are the conflict with the rural character of the community, and the number of residential and commercial uses that will be impacted along the preferred access route. Methods to mitigate these two impacts should be considered carefully during Phase 4B. It is also suggested that discussions with the Town of West Lincoln be initiated concerning appropriate methods to control land use around the site in order to minimize land use conflicts.

1. INTRODUCTION

PURPOSE OF REPORT

The purpose of this report is to present the land use analysis undertaken on behalf of Ontario Waste Management Corporation (OWMC) in the evaluation of the eight (8) candidate sites and the selection of a preferred site or sites for OWMC's hazardous waste treatment and disposal facilities. The report was prepared by Leon Kentridge Associates Limited, with subconsultants Marshall Macklin Monaghan Limited and Graydon Rodgers Appraisals Limited.

This report also includes data provided by the land use consultant which was used by other consulting firms which were members of the OWMC Site Selection Team. Details on the activities of the Site Selection Team are contained in the report Site Selection Process. Phase 4A: Selection of a Preferred Site(s) - Site Selection prepared by M.M. Dillon Limited.

FACILITIES DEVELOPMENT PROCESS

Figure 1.1, Facilities Development Process, illustrates the overall process within which the activities of the present stage fall. Phase 1, completed in September, 1982, defined the nature and size of the industrial waste problem and outlined the planning, environmental and engineering issues to be considered. Phase 2, completed in January, 1983, resulted in the search being narrowed to the Golden Horseshoe region of Southern Ontario.

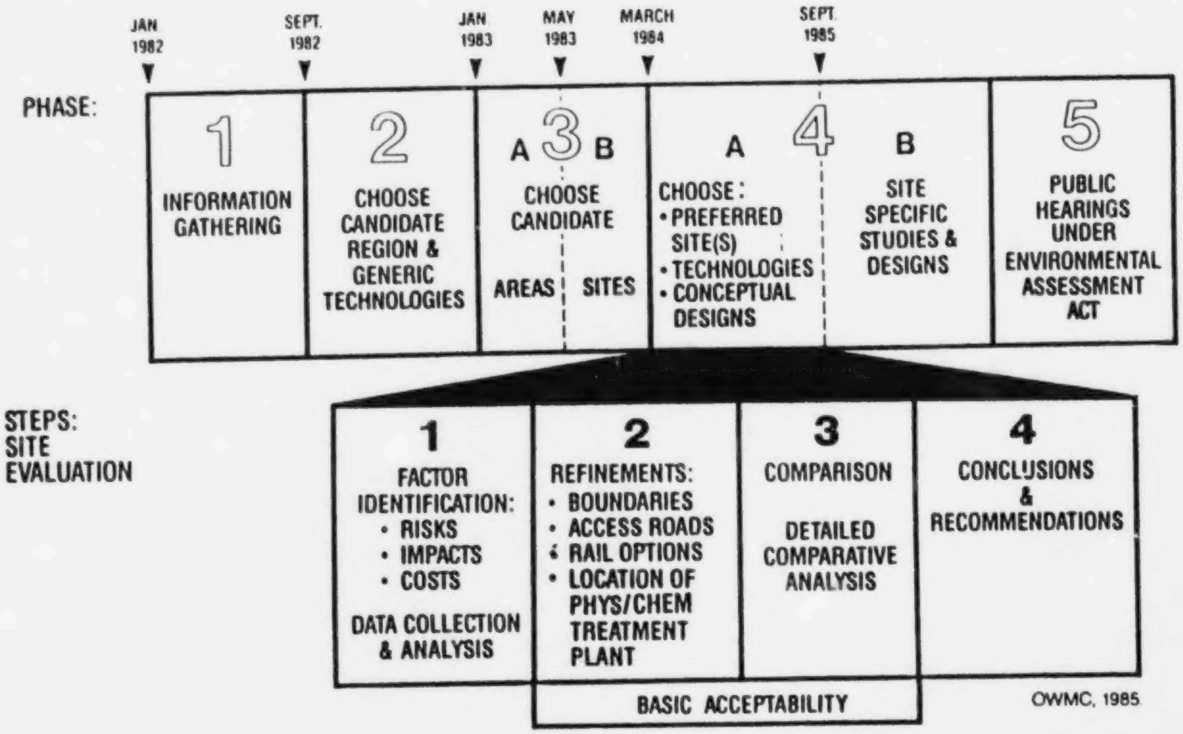
In May, 1983, a Phase 3 Interim Report was issued outlining 19 candidate areas within the Golden Horseshoe which met the initial criteria for hydrogeology, air dispersion, transportation access, etc. In January, 1984, another candidate area was identified following further analysis of publicly held and industrially designated lands north of Lake Ontario, bringing the total number of candidate areas to 20. During Phase 3B, a large number of possible site areas within the 20 candidate areas were assessed, resulting in 18 potential sites being evaluated, and 8 candidate sites identified.

A previous technical report, Site Selection Process - Phase 3B: Selection of Candidate Sites - Land Use described the land use analysis which contributed to the identification of the candidate sites.

For a complete description of the Facilities Development Process, reference should be made to the OWMC Phase 1 (1982), Phase 2 (1983a), Interim Phase 3 (1983b) and Phase 4A (1985a) Reports. A list of these reports, together with the technical reports prepared by other consultants to OWMC, appears in the List of References.

FIGURE 1.1

FACILITIES DEVELOPMENT PROCESS


JAN 1982
SEPT. 1982
JAN 1983
MAY 1983
MARCH 1984
SEPT. 1985
PHASE:
1
INFORMATION GATHERING
2
CHOOSE CANDIDATE REGION & GENERIC TECHNOLOGIES
A 3 B
CHOOSE CANDIDATE
AREAS
SITES
A 4
CHOOSE:
• PREFERRED SITE(S)
• TECHNOLOGIES
• CONCEPTUAL DESIGNS
B
SITE SPECIFIC STUDIES & DESIGNS
5
PUBLIC HEARINGS UNDER ENVIRONMENTAL ASSESSMENT ACT
STEPS: SITE EVALUATION
1
FACTOR IDENTIFICATION:
• RISKS
• IMPACTS
• COSTS
DATA COLLECTION & ANALYSIS
2
REFINEMENTS:
• BOUNDARIES
• ACCESS ROADS
• RAIL OPTIONS
• LOCATION OF PHYS/CHEM TREATMENT PLANT
3
COMPARISON
DETAILED COMPARATIVE ANALYSIS
4
CONCLUSIONS & RECOMMENDATIONS
BASIC ACCEPTABILITY

OWMC, 1985

SITING OPTIONS

This report documents the land use analysis undertaken in Phase 4A following the identification of 8 candidate sites in March, 1984. The location of these candidate sites are illustrated in Figure 1.2. From these 8 candidate sites, 13 possible siting options were assessed, leading to the eventual selection of a preferred siting option by OWMC.

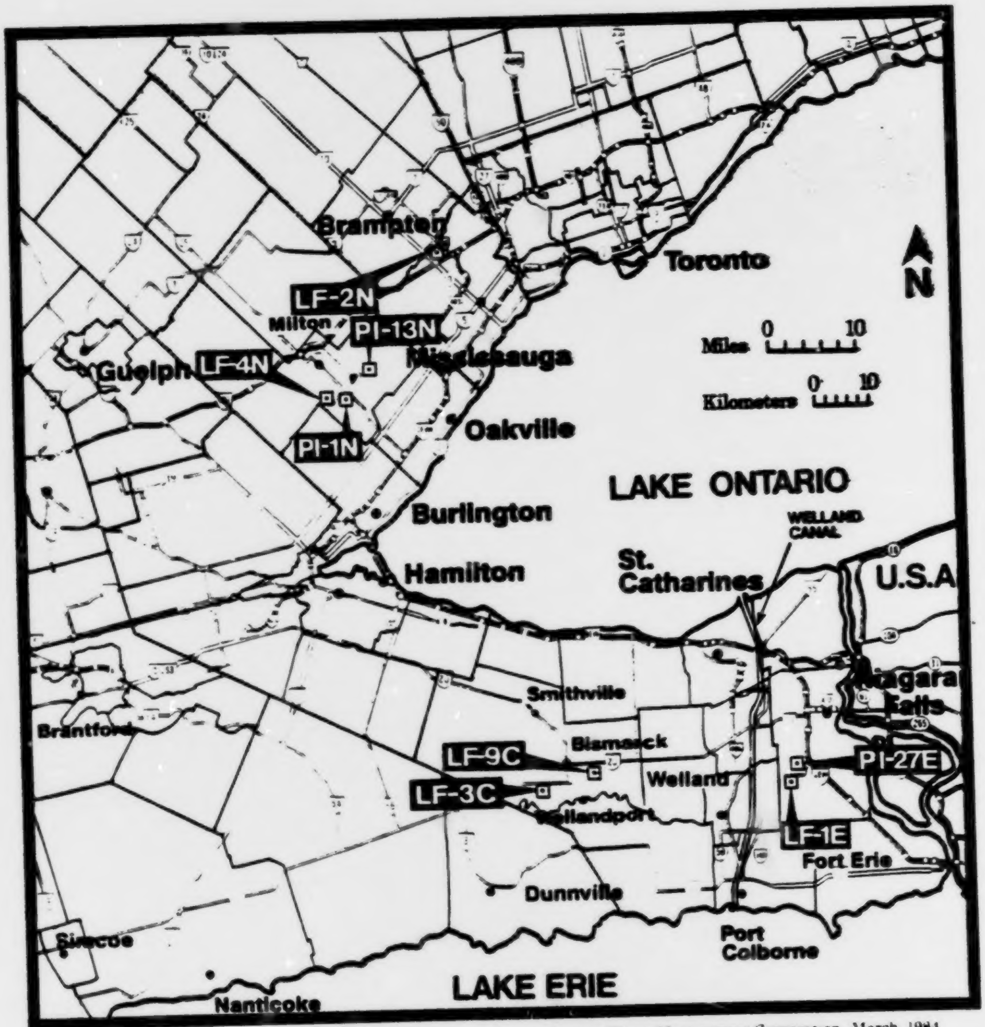
Siting options involve a combination of sites required to accommodate the three major components of OWMC's proposed treatment facilities - incinerator, physical/chemical treatment plant, and engineered landfill. The following three candidate sites were identified as fully integrated siting options:

- LF-1E
- LF-3C
- LF-9C

The remaining five candidate sites were considered together with another site in various combinations to form partially integrated siting options. These partially integrated siting options resulted in a total of 5 combined sites as follows:

- LF-2N/PI-1N
- LF-2N/PI-13N
- LF-4N/PI-1N
- LF-4N/PI-13N
- LF-1E/PI-27E

For each of these combined sites, 2 partially integrated siting options were considered. The first option involves the location of the physical chemical treatment plant and the incinerator together, with a separate engineered landfill. The second option involves the location of the physical/chemical treatment plant and the engineered landfill together, with a separate incinerator.



Brampton
Toronto
LF-2N
Milton
PI-13N
Mississauga
Guelph
LF-4N
PI-1N
Oakville
Miles 0 10
Kilometers 0 10
LAKE ONTARIO
Burlington
Hamilton
St. Catharines
WELLAND CANAL
U.S.A
Niagara Falls
Smithville
Brantford
Bismarck
LF-9C
LF-3C
Welland
Wellandport
PI-27E
LF-1E
Fort Erie
Dunnville
Port Colborne
Simcoe
LAKE ERIE
Nanticoke
N

Figure 1.2
Candidate Sites – Site Location

Source: Ontario Waste Management Corporation. March, 1984
Note: Symbols indicate location only, and not size or shape of sites.

Site Name	Landfill	Physical/ Chemical	Incinerator	
LF-2N	•	•		
LF-4N	•	•		
PI-1N		•	•	
PI-13N		•	•	
LF-3C	•	•	•	Integrated
LF-9C	•	•	•	Integrated
LF-1E	•	•	•	Integrated
PI-27E		•	•	

Legend

⊡ Candidate Site

Regional Municipal & County Boundaries

— Township, Town & City Boundaries

LF Landfill

PI Physical Chemical Treatment Plant & Incineration

Source: OWMC 1984

During Phase 4A, in May, 1985, OWMC announced that candidate site LF-2N in the City of Mississauga would be excluded from further consideration due to hydrogeologic conditions which do not provide natural containment.* This decision resulted in the elimination from further consideration of the following four siting options:

- LF-2N/PI-1N - Option 1
- LF-2N/PI-1N - Option 2
- LF-2N/PI-13N - Option 1
- LF-2N/PI-13N - Option 2

Also, as described in greater detail in Chapter 7, decisions were made as to which option should be selected with respect to the location of the physical/chemical treatment plant for the remaining three site combinations. This resulted in the elimination of three siting options.

As a result, during the final comparison of siting options, described in detail in Chapter 8, six siting options remained for examination. These were:

- LF-4N/PI-1N
- LF-4N/PI-13N
- LF-1E/PI-27E
- LF-1E
- LF-3C
- LF-9C

SITE EVALUATION PROCESS

The Site Evaluation Process was the process used during Phase 4A to select a preferred siting option through the refinement and comparison of siting options. This process consisted of the steps illustrated in Figure 1.1 - Facilities Development Process. These steps are described below.

---

* The technical rationale for this decision is contained in the report Site Selection Process. Phase 4A: Interim Site Selection Report - Candidate Site LF-2N prepared by M.M. Dillon.

Factor Identification - this involves the identification of factors which are used to measure the potential risks, impacts and costs of the waste management facility. The land use discipline is a subset of the impact factors. Within each factor, specific indicators and sub-indicators were developed to specifically measure impacts. The land use factors which were developed are documented in Chapter 2.

Data Collection and Analysis - for each of the factors and indicators, appropriate data were collected from a variety of primary and secondary sources. Data were collected during each of the Refinement of Siting Options steps, which are documented in Chapters 4, 5, 6 and 7. The data collection and analysis program which was used to compare the siting options is documented in Chapter 8.

Refinement of Siting Options - this step involved the refinement of each siting option through the selection of site boundaries, the identification of one route for rail access to those sites where rail access is desirable, the selection of access road(s) to each site and between partially integrated siting options, and the choice of the location of the physical/chemical treatment plant for partially integrated siting options. This analysis is documented in Chapters 4 to 7.

Basic Acceptability - prior to undertaking the comparison of siting options, a basic acceptability analysis was conducted in order to determine whether any new data emerged during Phase 4A which, on its own, warrants the rejection of any sites or siting options from further consideration.

Comparison of Siting Options - once each siting option was defined in a consistent manner, a comparison of the remaining siting options was undertaken. This was undertaken based upon the factors and indicators developed for the analysis, and the data which were collected under each indicator. The purpose of the comparison was to determine a ranking of siting options based upon the strengths and weaknesses of each siting option. Two analysis techniques were utilized for this comparison. These were:

Factor/Indicator Aggregation - this technique was used by each member of the Site Selection Team as a method of expressing the data in terms of degrees of suitability to facility siting. Once constraint levels and/or suitability ratings were assigned for a siting option, these were aggregated in order to establish an overall suitability level for the siting option. These suitability levels represent a quantitative approach to comparing siting options.

Review of Major Issues and Tradeoffs - during the course of the site evaluation process, issues and tradeoffs were identified which were significant to the comparison of siting options. Issues relate to the characteristics of a particular siting option, i.e. large number of residences on site. Tradeoffs refer to choices which must be made when choosing one siting option over another, i.e. large number of residences on site vs. large number of residences along access route.

This analysis technique was undertaken following the factor/indicator aggregation process, and is a qualitative analysis technique. The results of the review of major issues and tradeoffs process was used to test and temper the factor/indicator aggregation process.

Conclusions and Recommendations - this step concluded the process by combining the results of the two analysis techniques in order to produce a final ranking of siting options.

AREAS OF ANALYSIS

The object of this study was to examine, at an appropriate level of detail, three aspects of land use:

- existing land use
- land use planning
- land ownership

EXISTING LAND USE

The existing land uses which were the responsibility of the land use consultants consisted of the following categories:

- residential
- industrial
- commercial

The existing land uses not considered in this report, but addressed by other members of the Site Selection Team, are:

- agriculture
- community and recreation features
- natural features
- transportation and utilities

LAND USE PLANNING

The second aspect examined was land use planning policies. This report describes the manner in which the land use planning designations and policies of municipal and provincial governments were taken into account in the site selection process. In this instance, all such planning designations and policies were considered, with the exception of environmental and hazard land policies which were reviewed by Gartner Lee Associates Limited and reported on in their Biology (1985b).

In addition to planning policies, the future land use plans of private land owners were considered.

LAND OWNERSHIP

The third aspect considered by this report was land ownership. This has involved an examination of the pattern of land ownership, including owner occupancy and absentee land ownership, vacant lots and development potential. Trends in the market value of land were also examined.

As discussed later in the report, these areas of analysis formed the basis for the land use factors used to refine and compare siting options.

In addition, the land use consultants undertook additional investigations which were utilized as the basis of the analysis conducted by other consultants. Appendix A.1 lists all of the data inputs provided to, and received from, other members of the Site Selection Team.

STUDY AREAS

Several geographic study areas were utilized in order to assess the expected land use impacts resulting from the proposed facilities. Each of these study areas was developed by the Site Selection Team, except where noted. These are described below.

- site (site acquisition) area - the area identified in Phase 3B and further refined in Phase 4A, required for the location of facilities, including any buffer zones.
- site vicinity - the area immediately surrounding the site, potentially most directly affected by the facilities, extending approximately to 2 km from the site centre.
- community and regional area - the broader area surrounding the site vicinity boundary defined as the lands between the outer edge of the site vicinity and a circle with 5 km radius from the site centre. This area was developed by the land use consultant, and represents the outer limit of expected direct and indirect land use impacts.
- access roads - an 800 metre area, measured from the road centreline, abutting each side of all regional and local roads leading to the candidate site to be utilized by facility-generated truck traffic. The potential impacts of noise, visual instrusion, traffic interference and land use conflicts are expected to be contained within this zone.

- rail access corridors - 170 metre and 250 metre corridor abutting each side of potential rail spur lines to service the candidate sites, derived by M.M. Dillon - Transportation as the zone beyond which land use impacts from rail operations are expected to be minimal.*

SITE SELECTION GOALS AND OBJECTIVES

Many of the goals and objectives adopted by OMWC to guide the site selection process are relevant to the aspects of land use, land use planning and land ownership considered during this phase of the study. Reference should be made to Appendix to the Phase 3B Report, Facilities Development Process, OWMC, (March 1984) for the complete list of the site selection objectives.

The principal land use goal for the site selection process, under which more specific objectives were developed, was:

- To minimize environmental impact.

A total of nine (9) objectives stem from the identified land use-related goal of minimizing the environmental impacts associated with the proposed OWMC facilities. These are listed and discussed in relationship to the land use factors used in Phase 4A in Chapter 2 of this report (see pp. 24-26).

---

* See Site Selection Process. Phase 4A: Identification of Preferred Site(s) Transportation prepared by M.M. Dillon.

IDENTIFICATION OF FACTORS AND INDICATORS

With an understanding of the environmental aspects to be examined, the site selection process to be used by the Site Selection Team, and the goals and objectives for the process, the next task was to determine the land use, land use planning and land ownership factors which would be selected. The two primary purposes of these factors were:

- To define the scope of studies and activities to be undertaken.
- To be used in the refinement of siting options and the comparison of the siting options to select the preferred site(s).

Indicators are specific measures of a factor which, when considered in total, provide a comprehensive description of the potential impacts associated with that factor. For example, to measure impacts for the factor "existing land use", the number of residences would be a suitable indicator.

In selecting factors and indicators for each stage, several considerations were taken into account. These were:

- Does the proposed factor or indicator assist in evaluating the options under consideration relative to the goals and objectives established for the site selection process?
- Can the factor or indicator be described or measured with reliable and accurate data which are either available or which can be obtained during the proposed stage in the process?
- Can the factor or indicator be described or measured given the geographic area under study, and the scale of the base mapping to be employed?
- Is the factor or indicator relevant to the purpose of this stage in the site selection process?

The factors and indicators utilized in Phase 4A have been modified from those used in Phase 3B to reflect the wider range and greater detail of data generated as part of Phase 4A investigations. They also reflect the contribution of the public participation program initiated by OWMC towards the determination of factors and indicators. The public input in the factor and indicator selection process was derived from:

i) discussions with public agencies;
ii) meetings with municipal planners and representatives;
iii) public workshops held on January 28 and 31, 1985;

In addition, discussions among members of the Site Selection Team assisted in the selection and refinement of factors and indicators.

A more comprehensive outline of the factor and indicator identification process is contained in Chapter 2, Identification of Factors and Indicators.

Table 2.1 lists the Phase 4A land use factors and indicators used in this phase of the site selection process. Appendix B.1 provides complete information on all of the land use factors and indicators utilized.

The study areas for which the factors and indicators were applied varied depending on the consultant's assessment of whether data would be generated which would be useful in the refinement of siting options and the subsequent detailed comparative evaluation of siting options.

DATA COLLECTION PROGRAM

Phase 4A data were acquired from road side field surveys (primary sources) in addition to secondary sources such as municipal planning documents. Field investigations were performed on the eight candidate sites at a greater level of detail than in Phase 3B, and within revised boundary areas as the case required.

The scale employed for mapping data for the site, site vicinity and access roads study areas was 1:10000; for the community and regional area, 1:25000 mapping was utilized.

During Phase 4A, the extensive data files on municipal planning documents collected during Phase 3B were updated and additional data collected on development proposals, severance applications and lots of record. The majority of these data were provided by the local and/or regional municipalities in which the candidate sites are located.

While much of the data was recorded in matrix form for the siting options, presentation maps at 1:10000 scale were prepared for the sites and site vicinities showing planning controls, existing land uses and land ownership patterns.

Data collection and analysis were subject to continuous checking and quality control, including a comparison of land use field data with 1984 air photos, and a comparison of residential data with that collected by other consultants (i.e. the Institute for Environmental Research Limited study of the social environment) to cross-check data and ensure accuracy of information.

REFINEMENT OF SITING OPTIONS

Following the identification of factors and indicators and the collection of data, the next step was the comparison of various alternatives within each siting option. This step addressed the choices remaining with respect to:

- refinement of site boundaries
- rail access options
- access road options
- location of physical/chemical treatment plant for partially integrated siting options

The refinement of site boundaries component involved three candidate sites (PI-1N, LF-3C and LF-1E) which were sufficiently large in size to accommodate all the OWMC facilities assigned to them (including buffer areas) and have residual lands remaining. The purpose of the refinement of site boundaries exercise was to identify the portion of these three sites which would be most suitable for the location of the treatment facilities. The land use evaluation of site boundary refinement is contained in Chapter 4.

Rail access options refers to the possibility of providing rail service to the candidate sites. The provision of rail access was deemed to be an opportunity to reduce truck traffic volumes to the candidate sites by transporting some of the additives and reagents used in the waste treatment process by rail instead of road. Several rail options were evaluated in a two-step process for each site to determine a preferred route in terms of minimizing land use impacts. The process initially involved the mapping of constraints to facility siting in order to identify possible rail access alternatives. These alternatives were then subjected to comparative evaluation as a second step in order to determine the preferred rail access option. A review of these options is presented in Chapter 5.

Access road options, like those for rail, involved the evaluation of several different routes to the various siting options to determine the major constraints to be considered in selecting preferred road access routes to each site. Due to the large number of options originally identified, a two-part screening process was utilized. Details are contained in Chapter 6. It is noted that the access road evaluation considered both the routes to each site and the routes between two sites which comprised a partially integrated siting option.

Location of physical/chemical treatment plant options refers to partially integrated options where there was a choice between placing the physical/chemical treatment plant with the landfill or with the incinerator. The siting options where this choice was present were:

- LF-1E/PI-27E
- LF-4N/PI-1N
- LF-4N/PI-13N

A discussion of the comparative evaluation of partially integrated options is contained in Chapter 7. Siting options that included candidate site LF-2N were not considered further due to OWMC's announcement in May, 1985 to eliminate this site due to its failure to provide natural containment. Reference should be made to Site Selection Process. Phase 4A: Interim Site Selection Report - Candidate Site LF-2N, prepared by M.M. Dillon.

The steps used in the assessment of each of the identified options are generally similar. Firstly, factors, and where pertinent, indicators, were formulated for the purpose of comparing each set of options. Data were collected for the identified factors and indicators; these were compiled in data maps and in matrices. The relative differences among the options were indicated. A screening of factors and indicators was then undertaken; those factors and indicators which showed little or no difference between the options or which duplicated other indicators were dropped from further consideration. The remaining indicators were assessed relative to degrees of constraint, i.e. high, moderate or low constraint, and then combined to provide suitability ratings for each option on the basis of site selection factors.

The final step in the process was the ranking of options according to degree of constraint relative to land use impacts. This ranking became an input to the assessment by the Site Selection Team in the refinement of each siting option.

BASIC ACCEPTABILITY ANALYSIS

The objective of the basic acceptability analysis was to determine whether each site or siting option met some clearly established thresholds which, if surpassed, would contradict siting requirements and site selection principles. This process was carried out by each consultant to identify any sites which could not meet minimum levels of acceptability at the outset of the evaluation. (It was this analysis which resulted in the exclusion of candidate site LF-2N from further consideration due to hydrogeologic conditions.) There were no land use factors or indicators which revealed data that would contravene the basic acceptability of any of the candidate sites from a land use perspective.

COMPARATIVE EVALUATION OF SITING OPTIONS

The comparison of siting options was undertaken using two analysis techniques, both a quantitative and qualitative assessment of the data. The quantitative approach, known as Factor/Indicator Aggregation, involved a systematic data collection, tabulation, screening and aggregation process which is explained in greater detail below. The intent of this analysis was to express differences between siting options in numeric terms.

Briefly, the steps in moving from the original data matrices and maps prepared for each siting option by factor, indicator and study area, to suitability levels are as follows:

Screening of indicators - in this step, indicators were dropped from the analysis where there were no impacts for all options, where there was little or no differences between siting options or where it was not possible to operationalize indicators.

Aggregation of indicators - within factors, it was important to determine the relative importance of indicators. This was done, based upon the judgment of the land use consultant, through the ranking of indicators and the subsequent assignment of weights to the indicators. In addition, the indicator data were scaled, or grouped into various levels of constraint (i.e. low, medium or high constraint) or suitability levels. Subsequently, suitability levels for each indicator by siting option were combined with the weight of each indicator in order to provide a numeric basis of comparison among siting options.

Aggregation of factors - the aggregation of factors, into the Land Use Impacts factor grouping, involved very similar steps to those in the aggregation of indicators. The relative importance of each factor was determined; the land use consultant assigned rankings and weights to each factor based upon professional judgment.

The result of the aggregation of factors stage was the assignment of suitability ratings for each siting option for the overall Land Use Impacts Factor Grouping.

The qualitative assessment involved reviewing the background data which were subjected to the quantitative analysis in order to identify key issues and tradeoffs between siting options. By focussing on these key issues and tradeoffs, a rationale was developed to rank the siting options from a land use perspective. It is noted that the qualitative assessment is not entirely independent of the quantitative analysis in the overall land use evaluation as the ranking and weighting of factors and indicators involves the application of qualitative judgements to the numeric process. The selection of a preferred site(s) from a land use perspective thus reflects both quantitative and qualitative assessments, with the qualitative analysis being used to test the quantitative assessment.

This system was undertaken independently by the land use consultant and is reported in detail in Chapter 8 of this report. It also contributed to the evaluation of the siting options undertaken by the Site Selection Team.

ORGANIZATION OF THE REPORT

The balance of the report is divided into seven (7) chapters. Chapter 2, Identification of Factors and Indicators, discusses the process of identifying factors and indicators which are the basis of the site selection analysis. Chapter 3, Overview of Existing Environment, gives a general overview of the existing land use situation in the eight candidate sites and their vicinities.

Following this, Chapters 4, 5, 6 and 7 collectively describe the refinement of siting options process. The four components of this process are respectively, site boundary refinement, rail access options, access road options and location of physical/chemical treatment plant for partially integrated siting options. Chapter 8 sets out the comparative evaluation of siting options from a land use perspective and presents the final ranking of siting options. This chapter contains the conclusions and recommendations of the land use consultant which were provided to the Site Selection Team.

Supporting materials, including factor sheets, data matrices, and supplementary reports (population forecasts, official plan and zoning by-law reviews) are contained in the Appendices. Reference should be made to the List of Appendices for details.

2. IDENTIFICATION OF FACTORS AND INDICATORS

INTRODUCTION

This chapter describes the process used to identify factors for all aspects of the land use analysis during Phase 4A.

The chapter discusses the relationship between the Phase 4A factors and the factors used in Phase 3B, their consistency with the goals and objectives of the overall OWMC site selection process, and the role of facility characteristics assumptions, public input and residents' concerns in the development of factors.

The chapter also describes the indicators which have been identified for each of the factors. The indicators are more detailed measures of specific components of the factors which permit a thorough investigation and evaluation of the impacts related to each factor. In some cases, the indicators are further broken down into sub-indicators which measure very specific impacts within a selected study area.

The application of the factors and indicators at various steps in the site selection process is summarized in Table 2.1. The factors and indicators are described in detail in Appendix B.1 of the report.

TABLE 2.1

SUMMARY OF FACTORS, INDICATORS AND STUDY AREAS USED

Factor/Indicator	Boundary Refinement		Rail Access	Access Road		Location of Physical/Chemical			Comparative Evaluation of Siting Options			
	Site	Site Vicinity	Site Vicinity	Preliminary Access Roads	Comparative Evaluation Access Roads	Site	Site Vicinity	Access Roads	Site	Site Vicinity	Community & Regional	Access Roads
EXISTING LAND USE												
. Number of Residences	X	X	X	X	X	X	X	X	X	X		X
. Commercial Facilities		X	X		X		X	X	X	X		X
. Industrial Facilities									X	X		X
. Land Use Pattern		X			X				X	X	X	X
. Transportation Impact Index*								X				
. Distance Through Strip Residential Development**				X								
PROPOSED & PLANNED LAND USE												
. Land Use Designation		X			X	X	X		X	X	X	X
. Vacant Lots of Record					X				X	X		X
. Local Official Plan Policies					X				X	X	X	X
. Regional Official Plan Policies					X				X	X	X	X
. Local Zoning By-laws									X	X		X
. Unapproved Development Proposals					X				X	X		X
LAND USE STABILITY												
. Land Sales									X	X		
. Absentee Land Ownership									X	X		
. Building Quality									X	X		
. Trends in Land Values									X	X		
PROVINCIAL POLICIES & PLANS												
. Niagara Escarpment Plan										X	X	
. Parkway Belt West Plan										X	X	

* Used only in evaluation of physical/chemical treatment plant location.

** Used only in preliminary access road analysis.

PURPOSE OF FACTORS

The factors under consideration in this phase of the site selection process are intended to identify and highlight both the similarities and differences among the options considered in the refinement of siting options and among the siting options. As such, the factors relate to the goals and objectives of OWMC in its site selection process (see next subsection) to minimize risks, impacts and costs of the proposed waste management facilities.

The land use factors for Phase 4A concentrate on the aspects of "impacts" to the environment - that is, what major land use features may be affected within and surrounding the candidate sites and along access roads leading thereto. The factors relate to existing land use, land use planning and land ownership features.

Consideration of these factors in a detailed comparative evaluation of siting options is intended to serve the following functions:

- to refine the siting options;
- to assist the OWMC in its selection of a preferred site(s) from among the candidate sites.

FACTOR IDENTIFICATION PROCESS

The factor identification process involved several stages and levels of factor identification, screening, refinement and testing/review. Reference should be made to the Dillon Site Selection report, for a summary of the factor development process for the purposes of public consultation. The significant elements of the process are discussed below. They are:

- Relationship to OWMC Site Selection Goals and Objectives.
- Facilities Characteristics Assumptions.
- Relationship to Phase 3B Factors.
- Identification of Phase 4A Factors.
- Refinement of Phase 4A Factors.

RELATIONSHIP TO OWMC SITE SELECTION GOALS AND OBJECTIVES

The site selection goals and objectives which were identified in Phase 3 established the initial basis for the Phase 4A factors.

The three identified site selection goals in order of priority are:

- to minimize risk to human health;
- to minimize environmental impact;
- to minimize financial cost to OWMC and the people of Ontario.

Briefly, the process involved distributing the three major study components of risk, impact and cost into eleven factor groupings. These groupings reflect the potential major sources of risks and impacts to the environment. The environmental impacts from a land use perspective were grouped under "land use impacts".

Factors related to risk to health and financial cost to OWMC were assigned to other consultants, although the land use consultant was responsible for certain data collection and analysis related to those factors.

The land use impacts factor grouping ultimately produced four factors:

- provincial policies and plans;
- existing land uses;
- proposed and planned land use;
- land use stability.

Seventeen (17) indicators or measures of the factors were subsequently identified. The following identifies the nine (9) objectives central to the land use component of Phase 4A, and briefly outlines the relevant factors needed to adequately address these objectives. The relationship between the stated objectives and the land use factors and indicators is summarized in the following Table 2.2.

TABLE 2.2
RELATIONSHIP OF PHASE 4A FACTORS/ INDICATORS TO LAND USE OBJECTIVES - SUMMARY MATRIX

Factor	Indicator	Land Use Objectives Affected*								
		1	2	3	4	5	6	7	8	9
1. Provincial Policies and Plans	o Niagara Escarpment Plan	•		•	•		•	•		
	o Parkway Belt West Plan	•		•	•		•	•		
2. Existing Land Uses	o existing land use pattern	•	•	•	•		•			
	o number of residences	•		•	•		•		•	•
	o number of commercial/ industrial facilities	•	•	•	•	•	•		•	•
3. Proposed and Planned Land Use	o land use designations	•	•			•		•		•
	o approved development proposals	•	•			•				
	o unapproved development proposals	•	•			•			•	
	o vacant lots of record	•								
	o local official plan policies	•	•					•		
	o regional official plan policies	•	•					•		
	o local zoning by-laws	•	•			•				•
4. Land Use Stability	o land sales									•
	o development proposals									•
	o absentee land ownership								•	•
	o trends in land value									•
	o building quality								•	•

* See objectives listed and numbered on pages 23-25.

The site selection objectives related to minimizing environmental impacts which are significant for the land use consultants' work are as follows:

1) To minimize conflict with existing, committed, proposed and planned land uses.

This objective addresses one of the basic tenets of the land use component of the site selection process. This indicates the need for complete information on the nature of existing, proposed and planned land uses in and around a site, and also the ability to judge and measure conflicts or compatibility between land uses.

2) To maximize the potential for the establishment of the facility components in locations characterized by similar industrial uses.

The relevance of this objective to the land use component of the site selection process is twofold. First, it is consistent with the industrial character of the proposed facilities and would therefore be the most compatible with industrial uses. Second, it identifies the need early in the process to identify and characterize as industrial uses, heavy, medium, or light industrial.

3) To minimize conflict between the facility components, operations and the use and enjoyment of properties in the vicinity of the site(s), as a result of visual intrusion, noise, etc.

This objective addresses the need to have an adequate understanding of the characteristics of the proposed facility components, and the existing and proposed uses of properties surrounding the site(s) in order to make an assessment of the compatibility between the two. The potential for mitigating any visual intrusion, noise, or other anticipated impacts at a site(s) constitutes part of Phase 4A activities.

4) To maximize compatibility with the visual character and appearance of the landscape in the vicinity of the facility components.

Similar to the previous objective, a thorough knowledge of the appearance of the facility components must be combined with knowledge of the landscape around a site(s) in order to assess the relative compatibility of alternate sites.

5) To minimize the displacement of businesses.

This objective speaks to the need to identify the location of businesses on the candidate sites.

6) To minimize conflicts between the transportation of hazardous wastes to the facility components and the use and enjoyment of properties along access routes to the site(s).

As before, information on existing and future land uses along access routes must be considered in light of the volume and nature of truck traffic to each facility component in order to select access routes where such conflict is minimized.

7) To minimize conflict with Federal, Provincial and Municipal policies, programs and plans.

This objective indicates the need to obtain complete information on all such communities, policies, programs and plans as they relate to land use and land ownership and to judge their compatibilty with the proposed facilities.

8) To minimize the amount of private property required (to safely construct and operate the facility components) and the disruption to land ownership patterns.

This objective makes the land ownership pattern of a site relevant to the site selection process. Once a site which meets other requirements has been located, it will be important to overlay the pattern of land parcels on and around the site in order to determine how much land must be acquired.

9) To minimize property value depreciation.

One of the most significant determinants of change to property values is the actual and perceived compatibility between land uses. The best way to meet this objective is to select a site where land use conflicts between the facility and surrounding uses are also minimized.

FACILITIES CHARACTERISTICS ASSUMPTIONS

For the purpose of Phase 4A of the site selection process, the site selection team and OWMC specified a number of assumptions regarding the characteristics of the OWMC facilities. The facility characteristics assumptions are detailed in the Status Report, Facility Design, Monenco Limited (April, 1985) with additional information provided by the Site Selection Process - Phase 4A: Selection of a Preferred Site - Engineering prepared by Monenco Limited.

Table 2.3 - Relevant Facilities Characteristics outlines those facilities characteristics which were significant to the land use analysis, and their role in the analysis.

RELATIONSHIP TO PHASE 3B FACTORS

Phase 3B of the Site Selection Process encompassed three distinct activities, ie., the identification of site areas, the identification of potential sites, and the identification of the eight candidate sites.

The land use factors which were initially developed for the identification of site areas evolved substantially through the second and third steps of Phase 3B, in response to the increasingly more detailed scale of mapping, greater use of primary data sources, finer division of study areas, input from the public and government agencies, and the need for increasingly more sensitive means of differentiating between sites with similar characteristics. The process also worked to eliminate a number of factors and indicators which were found not to provide a meaningful differentiation between siting options.

The factors covered the following aspect of land use:

- Existing Commercial and Industrial Uses
- Future Commercial and Industrial Uses
- Existing Residents
- Future Residents
- Land Acquisition
- Future Resources (Rural/Agricultural Designations)
- Existing Community Character (Land Use Pattern)

These factors were applied to the site, site vicinity, and local and regional access roads.

TABLE 2.3

RELEVANT FACILITY CHARACTERISTICS ASSUMPTIONS

Facility Characterics Assumption	Role in Analysis
General operating characteristics and appearance of the incinerator are comparable to a heavy industrial use.	Identified existing, planned and proposed compatible land uses as heavy industrial. Indicators of existing, planned and proposed land uses were official plans, zoning by-laws and related local, regional or provincial policy statements.
General operating characteristics and appearance of the physical/chemical treatment facility are comparable to a general industrial use.	Identified existing, planned and proposed compatible land uses as general to heavy industrial. Indicators of existing, planned and proposed land uses were official plans, zoning by-laws and related local, regional or provincial policy statements.
General operating characteristics and appearance of the engineered landfill facility are comparable to a solid waste landfill facility.	Identified existing, planned and proposed compatible land uses as rural non-agricultural. Indicators of existing, planned and proposed land uses were official plans, zoning by-laws and related local, regional or provincial policy statements.

TABLE 2.3
(Continued)
RELEVANT FACILITY CHARACTERISTICS ASSUMPTIONS

Facility Characterics Assumption	Role in Analysis
All special waste can be assumed to arrive by road transport only for purposes of site selection. Shipment of additives and/or reagents can be assumed to arrive by road or rail.*	Land use impacts were considered 800 metres either side of access roads.
Total solidification of treated wastes will be undertaken.	Assessment of transportation impacts based on volume of truck traffic associated with total solidification. Approximately 180 trucks/day are anticipated.

With the exception of the Future Residents factor which was deleted from consideration with respect to the site and site vicinity study areas due to the exclusion of future residential areas within these study areas, the Phase 3B factors were carried forward to Phase 4A, though in a modified form. The modifications resulted from the increase in the level of detail of investigation possible in Phase 4A. The relationship of the Phase 3B factors to those utilized in Phase 4A is presented in Table B.3 in Appendix B.

---

* OWMC is still considering the possibility of transporting additives and reagents by rail transport. The effect this decision, if taken, may have on the comparative evaluation of siting options is discussed in Chapter 8.

It is noted that the changes in the factors between the two phases reflects a concentration of the Phase 4A land use factors on the objectives related to the goal of minimizing environmental impacts. Phase 3B land use factors and indicators which were related solely to the goals of minimizing risk and cost have been assigned in Phase 4A to other consultants on the site selection team or have been revised to relate to the land use - related aspects of the sites, such as Land Use Stability. For example, the Land Acquisition factor was a primary consideration of Monenco Limited, the facilities engineering consultant in Phase 4A. Monenco received input relating to land values from the land use sub-consultant, Graydon Rodgers Appraisals Limited. Trends in land values and volumes of land sales in the site and site vicinity remained integral indicators for the land use factor, Land Use Stability, in Phase 4A.

The Land Use Stability factor represents the major new factor to be introduced in Phase 4A. The factor refers to the continuity of land use over time. It addresses the degree of land use change in the candidate communities as indicated by land sales, land ownership by absentee owners, trends in land values and building quality. These are deemed to be indicators of the degree of commitment of landowners to the area.

The other three Phase 4A land use factors for the most part employ factors and indicators utilized in Phase 3B. The Proposed and Planned Land Use factor does, however, include one new indicator, vacant lots of record. The indicators approved and unapproved development applications have been expanded to include severance applications, and were also applied to the access road study area.

PHASE 4A FACTORS AND INDICATORS

The Land Use Impact factors identified for Phase 4A data collection and analysis are listed below, together with a description of the definition and significance of the factor.

1. Provincial Policies and Plans

The OWMC facility could conflict with existing Provincial policies and plans. This factor considers the compatibility of the proposed facility with the Niagara Escarpment Plan and the Parkway Belt West Plan which are two plans in the vicinity of, or in the region of, the candidate sites.

2. Existing Land Uses

OWMC facilities are essentially industrial in nature and will be most compatible with existing heavy industrial uses. The factor addresses the relative degree of compatibility of the proposed facility and existing land uses. The existing land use pattern is studied as well as the number of residences and industrial and commercial facilities on site, in the site vicinity, along access routes and in the community and regional area.

3. Proposed and Planned Land Use

OWMC facilities are also generally compatible with proposed heavy industrial uses. This factor considers the relative degree of land use compatibility of the proposed facility and planned and proposed future residential, commercial and industrial uses. The intent of this factor is to account for the different types and rates of growth planned for each candidate site. The study areas included site, site vicinity, access roads and, where appropriate, the community and regional area.

4. Land Use Stability

Land use stability refers to the continuity of land use over time. This continuity could be disrupted by a significant change in land use. This factor addresses the degree of land use change in the candidate communities based upon land sales, land ownership by absentee owners, trends in land values and building quality. The site and site vicinity study area were considered for all indicators.

The relationship between the factors, indicators and study areas is detailed in Table 2.1, Phase 4A Factors and Indicators.

REFINEMENT OF PHASE 4A FACTORS AND INDICATORS

Further refinements to the factors were made during Phase 4A on the basis of:

- additional data, issues and concerns raised through agency contacts;
- concerns and issues raised through community meetings, briefs, submissions and other inputs received through the public consultation program;
- public and agency comments and suggestions made during the course of the review of the Phase 3B technical reports, which are on file with OWMC and the site selection consultant team;
- direct responses to the preliminary list of factors received from agencies and meetings with local residents, which are on file with the land use consultant.

. With respect to the latter, this overview, together with the preliminary lists of factors and indicators, was circulated to agencies and local groups. A brief definition and a description of the significance of each factor was also circulated. After the groups and agencies had an opportunity to review the factors, a series of meetings was held to review such questions as:

- Are there issues and concerns which are potentially relevant to the selection of a preferred site which have not been addressed by the factors and indicators?

- What additional factors and indicators should be added to those already listed?

- Are there factors and indicators which should not be used to compare the candidate sites?

- Are there definitions or descriptions of significance of factors which are confusing, incomplete or inaccurate?

- Are the indicators listed the most appropriate way of predicting and describing potential risks, impacts and costs?

- Are there additional information sources which might assist in applying the factors and indicators?

The meetings provided an important check to determine whether the factors reflect the full range of community and agency concerns as they pertain to the comparative analysis of candidate sites. Where gaps were identified, the factors and indicators were modified and supplementary data collection and analysis undertaken.

The factors and the Phase 3B site selection reports have been reviewed locally in a second series of meetings or workshops at which the procedures for synthesizing the data obtained into an overall ranking of sites were reviewed.

Table B.1 in Appendix B sets out the Land Use factors for site selection in Phase 4A, noting the indicators for each factor, the definition and rationale/significance, for each indicator, principal sources of information and relevant study area for each indicator, and how the indicator was interpreted relative to facility siting.

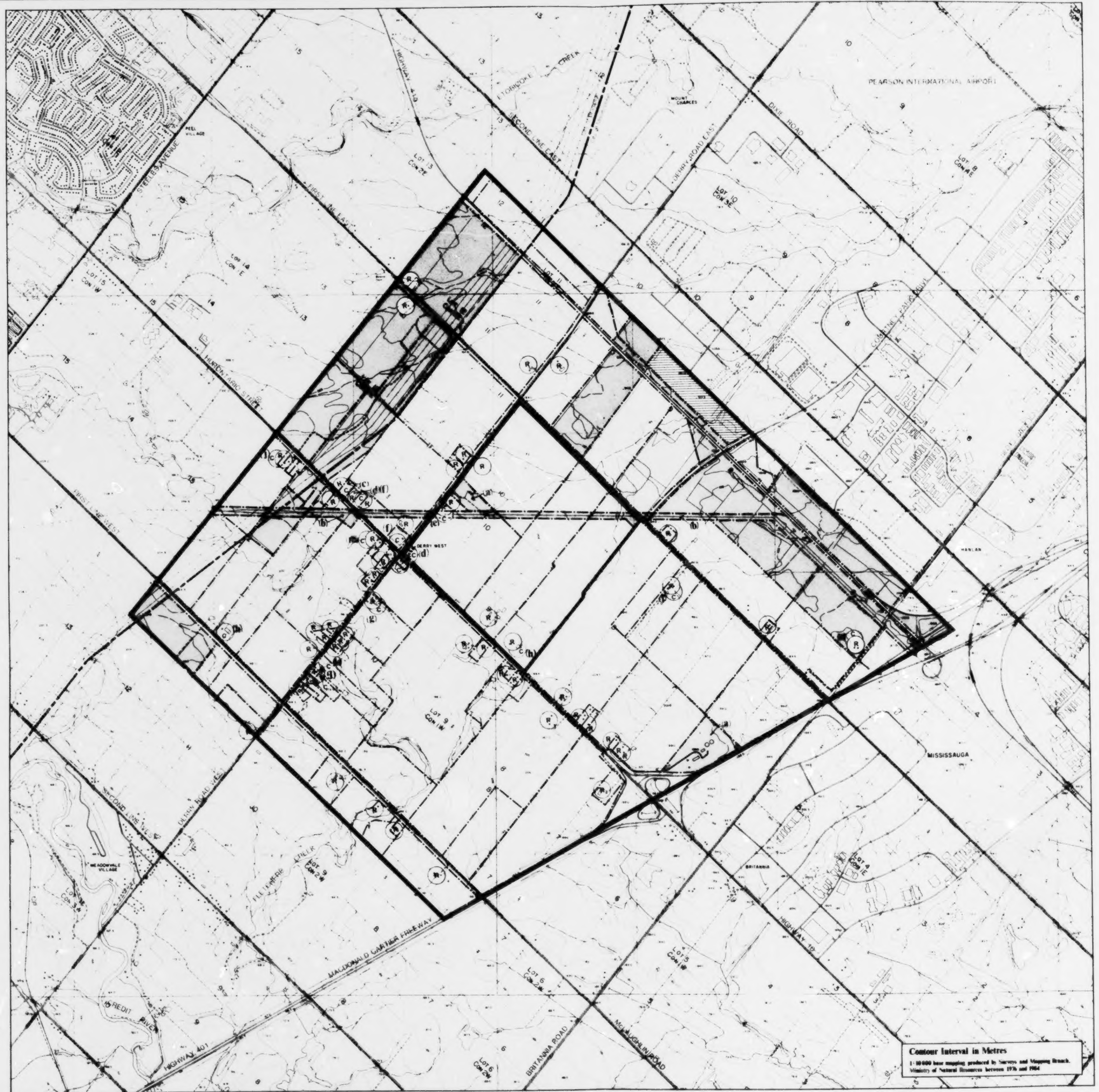
3. OVERVIEW OF EXISTING ENVIRONMENT

INTRODUCTION

The purpose of this chapter is to describe in general terms the land use, land use planning and land ownership characteristics of the eight candidate sites and their surroundings.

These descriptions provide a starting point for understanding the more detailed and analytical discussions of the component study areas for each site which are set out in the next four chapters. Reference should be made to Appendix C for detailed summaries of the data collected for four (4) of the eight candidate sites - LF-2N, PI-1N, LF-3C and LF-1E. LF-2N was dropped from consideration during the basic acceptability analysis component of Phase 4A. The data collected by the land use consultant for LF-2N, included access roads to the site, are presented in Table C.1 of Appendix C. Data for PI-1N, LF-3C and LF-1E prior to the site boundary refinements of these sites, are presented in Tables C.2 to C.4. Data for the remaining 4 sites are contained in Table H.8 of Appendix H as these sites were not further refined during Phase 4A.

The data for all sites and siting options subjected to the detailed comparative evaluation are presented in Appendix H, Table H.8.


PEARSON INTERNATIONAL AIRPORT
STEELES AVENUE
PEEL VILLAGE
HIGHWAY 410
ETOBICOKE CREEK
MOUNT CHARLES
SECOND LINE EAST
KENNEDY ROAD EAST
DIXIE ROAD
HURONTARIO STREET
DERRY WEST
MISSISSAUGA
MEADOWVALE VILLAGE
FLETCHERS CREEK
MACDONALD CARTIER FREEWAY
HIGHWAY 401
CREDIT RIVER
SECOND LINE WEST
BRITANNIA ROAD
MCLAUGHLIN ROAD
HIGHWAY 10
BRITANNIA

Contour Interval in Metres

1:10 000 base mapping produced by Surveys and Mapping Branch, Ministry of Natural Resources between 1976 and 1984

OWMC Ontario Waste Management Corporation

Consultant:
LEON KENTRIDGE ASSOCIATES LTD.
Marshall Macklin Monaghan Limited

Legend:

Existing Land Use

Ⓡ	Residential		
Ⓒ	Commercial		
Ⓘ	Industrial	▤	Industrial Under Construction

Land Ownership

—·— Property Boundary

▭ Publicly Held Lands

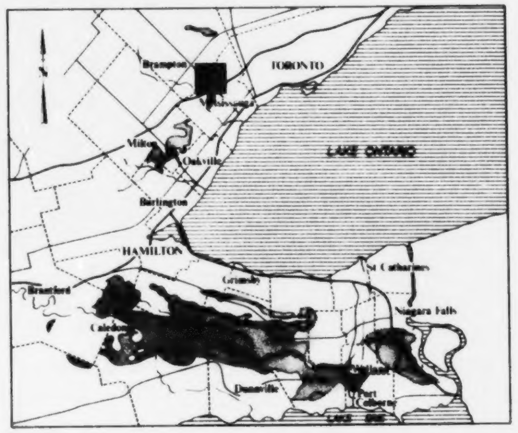
Notes

a	Public Works Yard	h	Riding Stable
b	Ontario Hydro	i	Used Equipment
c	Fruit Market	j	Furniture Business
d	Gas Station	k	Fencing Business
e	Construction Storage	l	Dog Kennel
f	Restaurant	m	Landscaping Business
g	Construction Equipment Storage	n	A.J. Duck Ranch

▬ Phase 3B Acquisition Boundary ▬ Site Vicinity Study Area Boundary

Key Map: **LF-2 North**

Lots 9 and 10; Concession 1 EHS (East of Hurontario Street), City of Mississauga

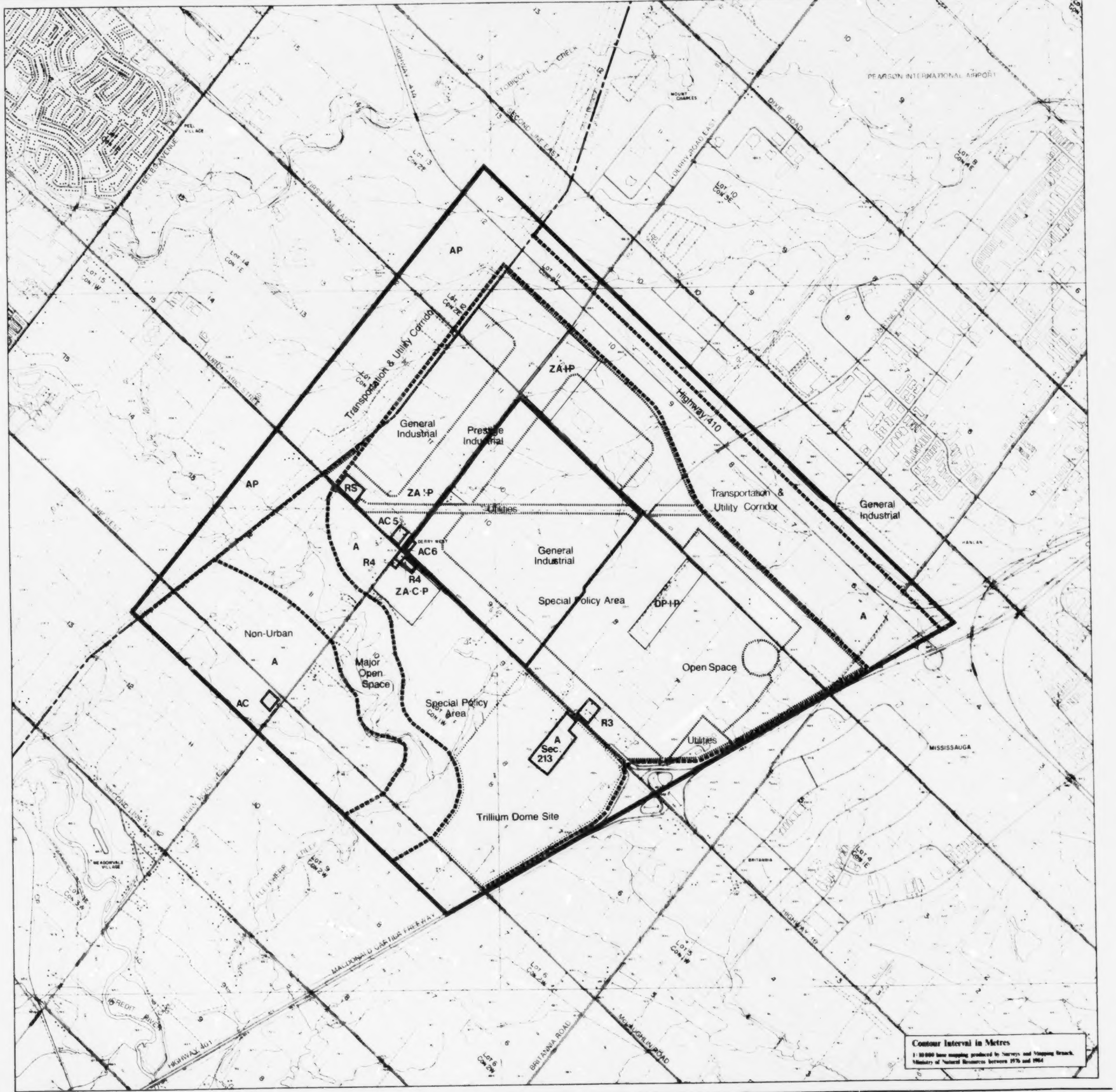

Brampton
TORONTO
Mississauga
Milton
Oakville
LAKE ONTARIO
Burlington
HAMILTON
St Catharines
Brantford
Grimsby
Niagara Falls
Caledonia
Welland
Dunnville
Port Colborne
LAKE ERIE

See Report Appendix for Sources

1000 feet 0 1000
500 metres 0 500

Existing Land Use and Land Ownership

November 1985 Figure 3.1



AP
Transportation & Utility Corridor
General Industrial
Prestige Industrial
ZA·I·P
RS
AC 5
AC6
R4
ZA·C·P
A
Non-Urban
AC
Major Open Space
Special Policy Area
Utilities
General Industrial
Special Policy Area
DP·I·P
Open Space
A Sec. 213
R3
Trillium Dome Site
Highway 410
Transportation & Utility Corridor
General Industrial
Pearson International Airport
Peel Village
Mount Charles
Dixie Road
Second Line East
Etobicoke Creek
Highway 410
Derry West
Mississauga
Britannia
Meadowvale Village
Macdonald Cartier Freeway
Highway 401
Credit River
Britannia Road
McLaughlin Road
Highway 10

Contour Interval in Metres

1:10 000 base mapping produced by Surveys and Mapping Branch, Ministry of Natural Resources between 1978 and 1984

OWMC Ontario Waste Management Corporation

Consultant:

LEON KENTRIDGE ASSOCIATES LTD

Marshall Macklin Monaghan Limited

Legend:

Area Municipality Official Plan

▬ Non-Urban
▬ Major Open Space
▬ General Industrial
▬ Special Policy Area
▬ Transportation & Utility Corridor

Area Municipality Secondary Plan (Derry East)

▬ Prestige Industrial
▬ General Industrial
▬ Utilities
▬ Open Space

Zoning By-Law

A	Agricultural
R3,R4, RS	Residential
AC, AC5, AC6	Automotive Commercial
AP	Agricultural Parkway Belt

Development Application

ZA·I·P	Zoning Amendment • Industrial • Pending
ZA·C·P	Zoning Amendment • Commercial • Pending
DP·I·P	Draft Plan • Industrial • Pending

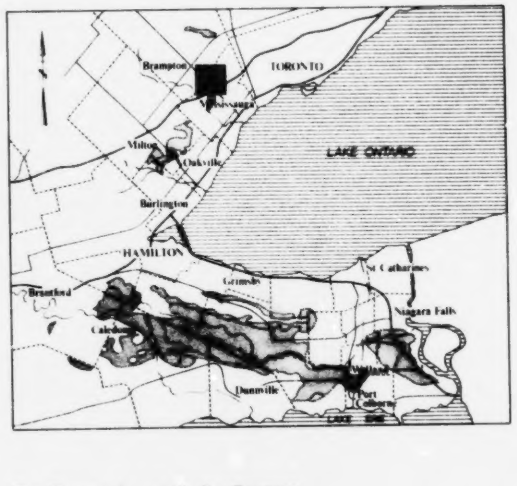
Notes

A Sec 213 Permits private recreation club

▬ Phase 3B Acquisition Boundary
▬ Site Vicinity Study Area Boundary

Key Map: **LF-2 North**

Lots 9 and 10; Concession 1 EHS (East of Hurontario Street), City of Mississauga



Brampton
TORONTO
Mississauga
Milton
Oakville
LAKE ONTARIO
Burlington
HAMILTON
St Catharines
Brantford
Grimsby
Niagara Falls
Caledonia
Dunnville
Welland
Port Colborne
LAKE ERIE

See Report Appendix for Sources

1000 feet 0 1000
500 metres 0 500

Planning Status

November 1985 **Figure 3.2**

DESCRIPTION OF CANDIDATE SITES

LF-2N

Site Location

LF-2N is a 172 ha site located in the northern part of the City of Mississauga. It is bounded on the northwest by Derry Road East, the southwest by Hurontario Street (Highway No. 10) and the northeast by First Line East.

LF-2N has been identified as a potential landfill site and possibly also a site for a physical/chemical treatment plant.

Existing Land Use

The existing use of the site is predominantly rural and vacant (see Table C.1 in Appendix C). There are 5 residences and 3 small commercial uses including an automobile service station, a home business (construction company), and a horse riding stable operating on a farm. The site is traversed diagonally by a hydro line.

The site vicinity of LF-2N is predominantly vacant but has approximately 50 residences and a number of commercial facilities, including gas stations, restaurants, riding stables, fruit markets, furniture stores and home-based businesses. Building condition is generally good. The site vicinity includes Highway No. 410 and the Parkway Belt transportation utility corridor between Brampton and Mississauga. It is bounded on the south by Highway No. 401.

The community and regional area includes existing residential communities in the southern part of urban Brampton and Meadowvale Village in Mississauga and developed industrial areas in West Malton and Britannia in Mississauga.

Proposed and Planned Land Use

The consultants were not able to establish the status of development proposals in the site or vicinity as this information was not made available by the City of Mississauga.

The site is zoned almost entirely Agricultural, with minor commercial exceptions. LF-2N is designated as a Special Policy area in the Mississauga Official Plan. In the unapproved draft Derry East Business Park Secondary Plan*, which also covers much of the site vicinity, the site is shown for General and Prestige Industrial uses. Other designations in the site vicinity include Parkway Belt (transportation and utility corridor uses) and Agricultural. The draft Region of Peel Official Plan shows the site and site vicinity as being outside the Urban Peel area.

Land use designations in the community and regional area include all or part of four residential communities in Brampton and another four in Mississauga, with an estimated future capacity in excess of 60 000 persons. It also includes areas proposed for Prestige and General Industrial uses.

Land Use Stability

Absentee land ownership of the site is very high, approximately 90% of a properties. Land values, which have risen some 90% in the period of 1980-83, reflect the strong trend to urban development in this area.

Provincial Policies and Plans

The Parkway Belt West Plan designates a swath of land north of the site in the site vicinity for transportation and utility corridor uses.

LF-4N

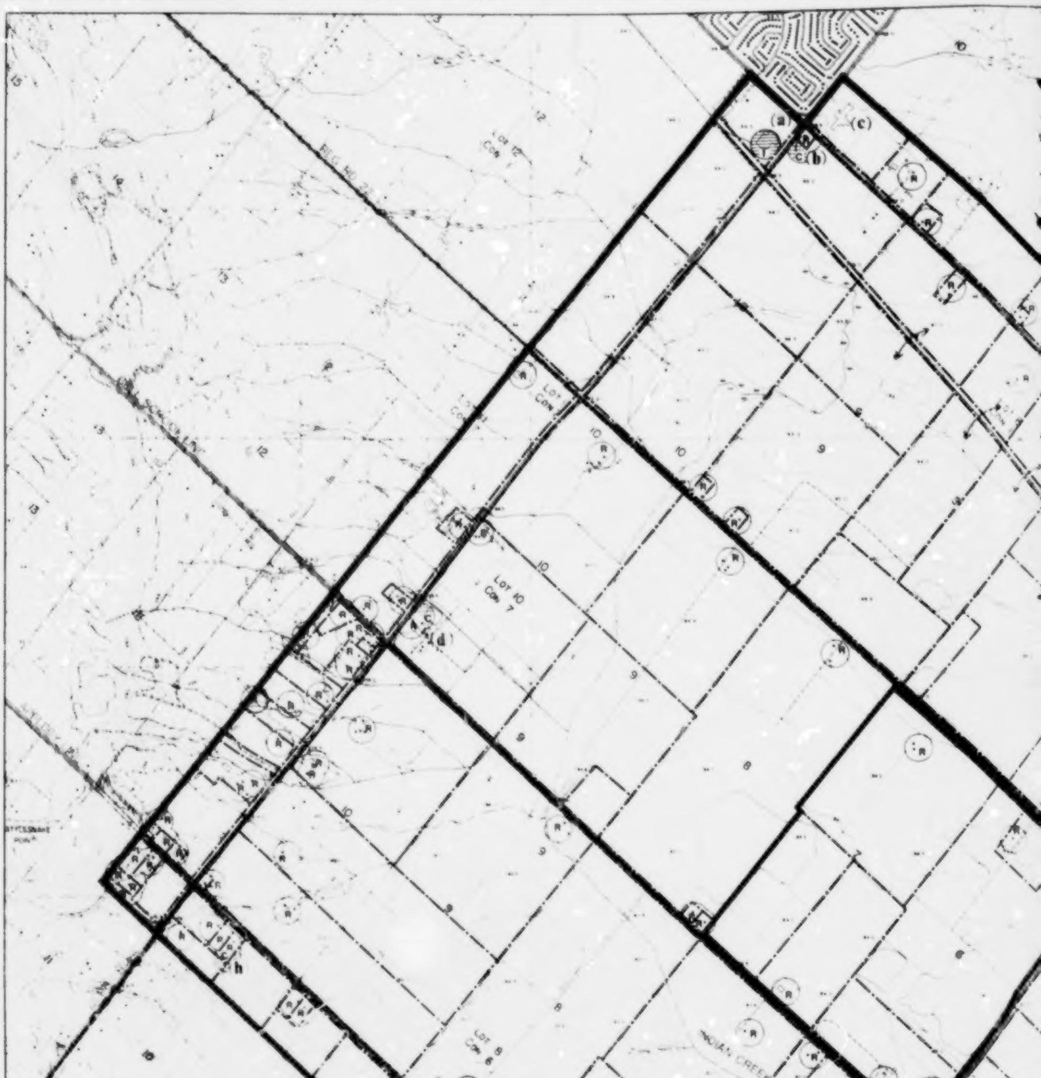
Site Location

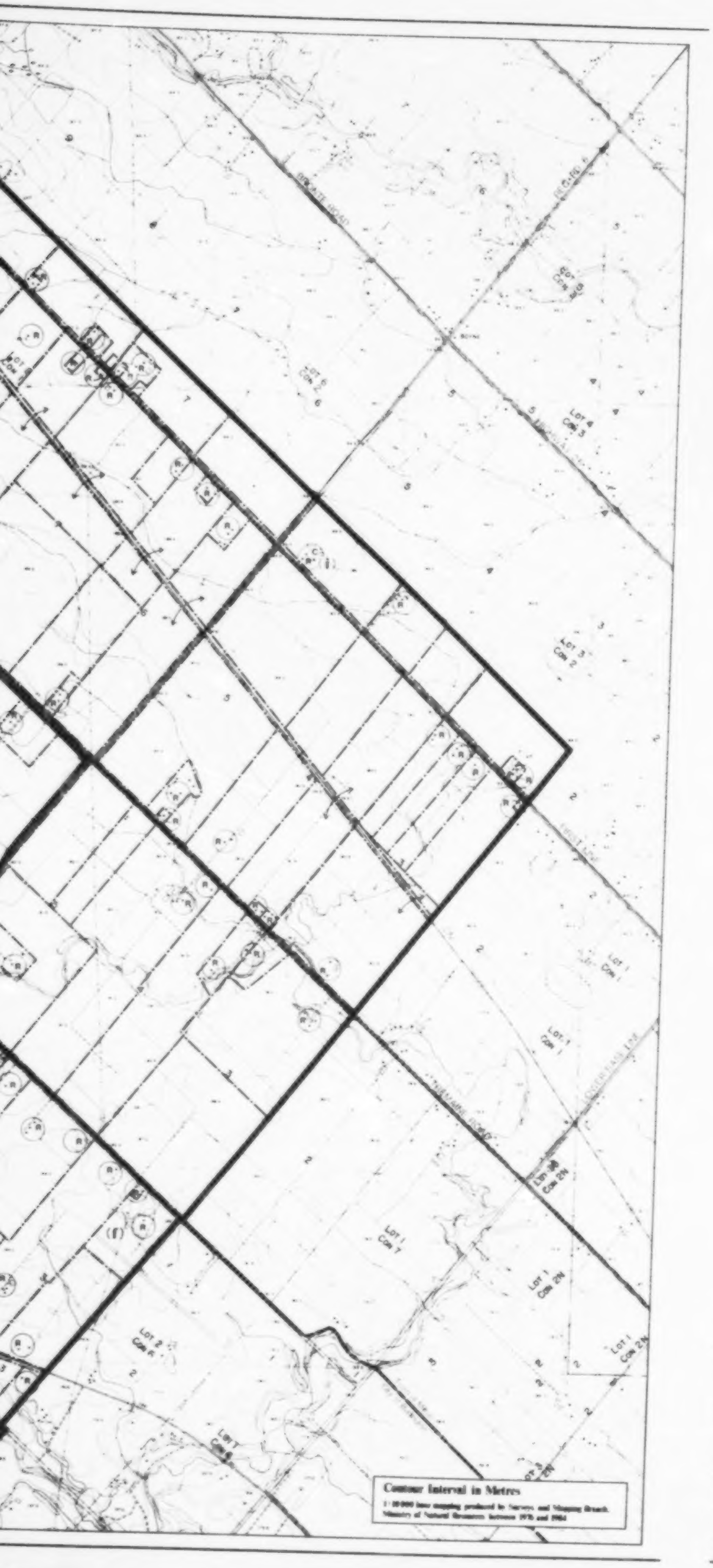
LF-4N is a 168 ha site located in the western part of the Town of Milton, abutting the City of Burlington. It is bounded on the southwest by Bell School Line, the southeast by Britannia Road West and the northeast by Tremaine Road.

LF-4N has been identified as a potential landfill site and possibly also a site for a physical/chemical treatment plant.

---

* In May, 1985, the City of Mississauga adopted the Derry Secondary Plan, which affected the site. However, this was adopted at the time that LF-2N was dropped from further consideration by OWMC. No consideration was given, therefore, to the Derry Secondary Plan.


(a)
(b)
(c)
(d)
(e)
h
LOT 10
CON 7
LOT 8
CON 6
LOT 6
CON 5
LOT 7
CON 4
INDIAN CREEK
R


Lot 6
Con 6
Lot 4
Con 3
Lot 3
Con 2
Lot 1
Con 1
Lot 3B
Con 2N
Lot 1
Con 7
Lot 1
Con 2N
Lot 2
Con 6
Lot 1
Con 2N
Lot 1
Con 6
(i)
(f)
Contour Interval in Metres
1:10 000 base mapping produced by Surveys and Mapping Branch, Ministry of Natural Resources between 1978 and 1984

OWMC Ontario Waste Management Corporation

Consultant:

Leon Kentridge Associates Ltd.

Marshall Macklin Monaghan Limited

Legend:

Existing Land Use

- (R) Residential
- (C) Commercial
- (I) Industrial

Land Ownership

- ·—·— Property Boundary
- ☐ Publicly Held Land

Notes

(a)	Canadian Meter Co.	(h)	Kennel
(b)	Restaurant	(i)	Riding Stables
(c)	Milton District Hospital		
(d)	Bousefields Apples & Cider		
(e)	Mordens Quarter Horses		
(f)	Kovachik Airport Service		
(g)	Carpentry Business		

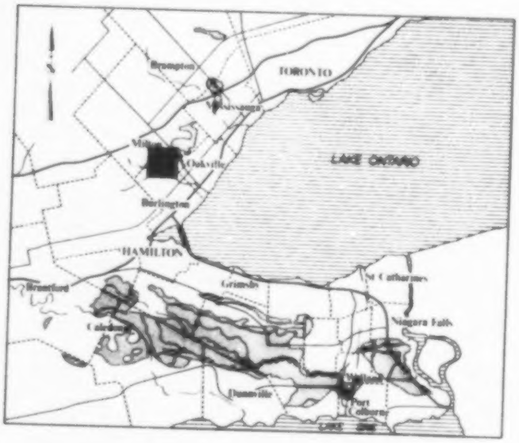
— Phase 3B Acquisition Boundary

▬ Site Vicinity Study Area Boundary

Key Map:

LF-4 North

Lots 6 and 7: Concession VII: Town of Milton, formerly in the Township of Nelson


Brampton
TORONTO
Mississauga
Milton
Oakville
LAKE ONTARIO
Burlington
HAMILTON
Brantford
Grimsby
St Catharines
Niagara Falls
Caledonia
Dunnville
Welland
Port Colborne
LAKE ERIE

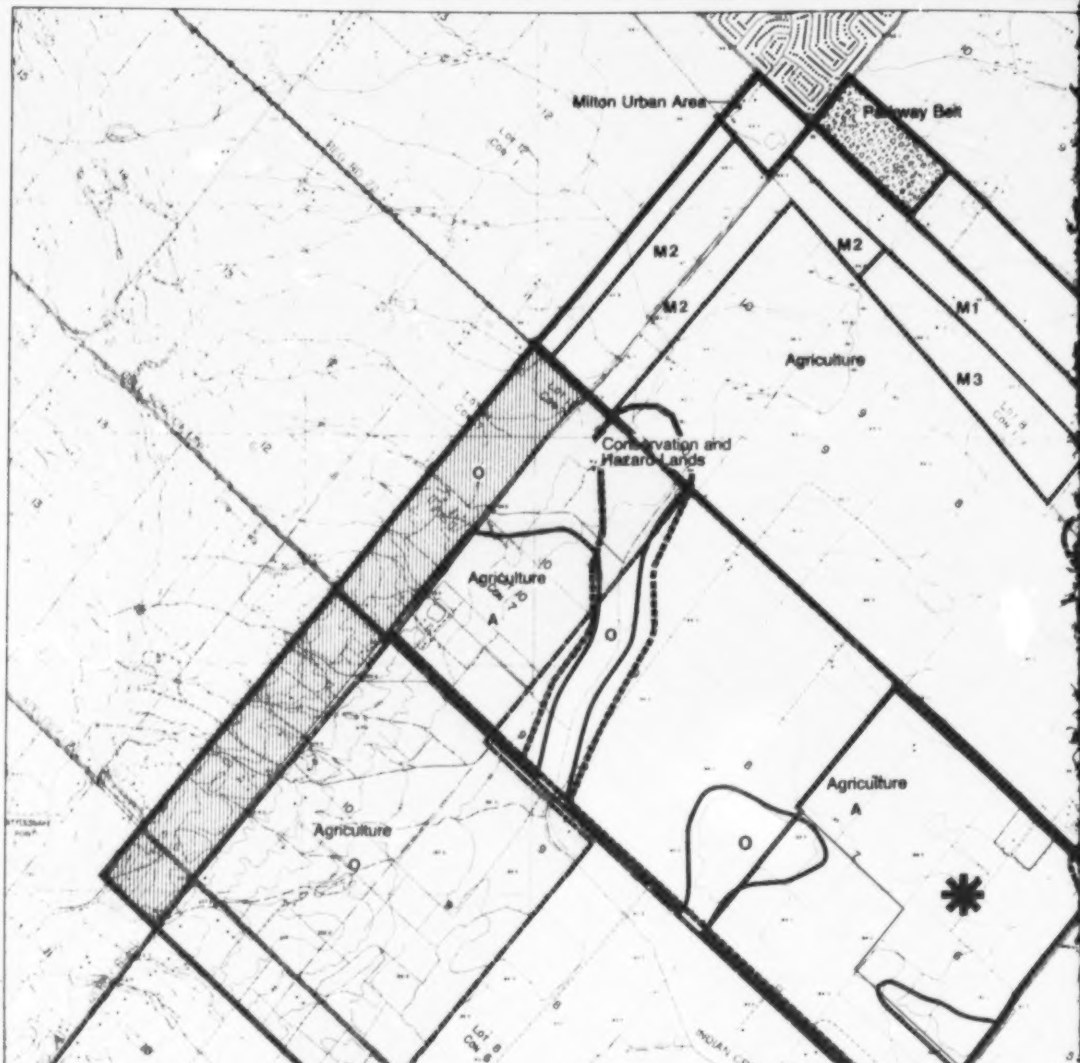
See Report Appendix for Sources

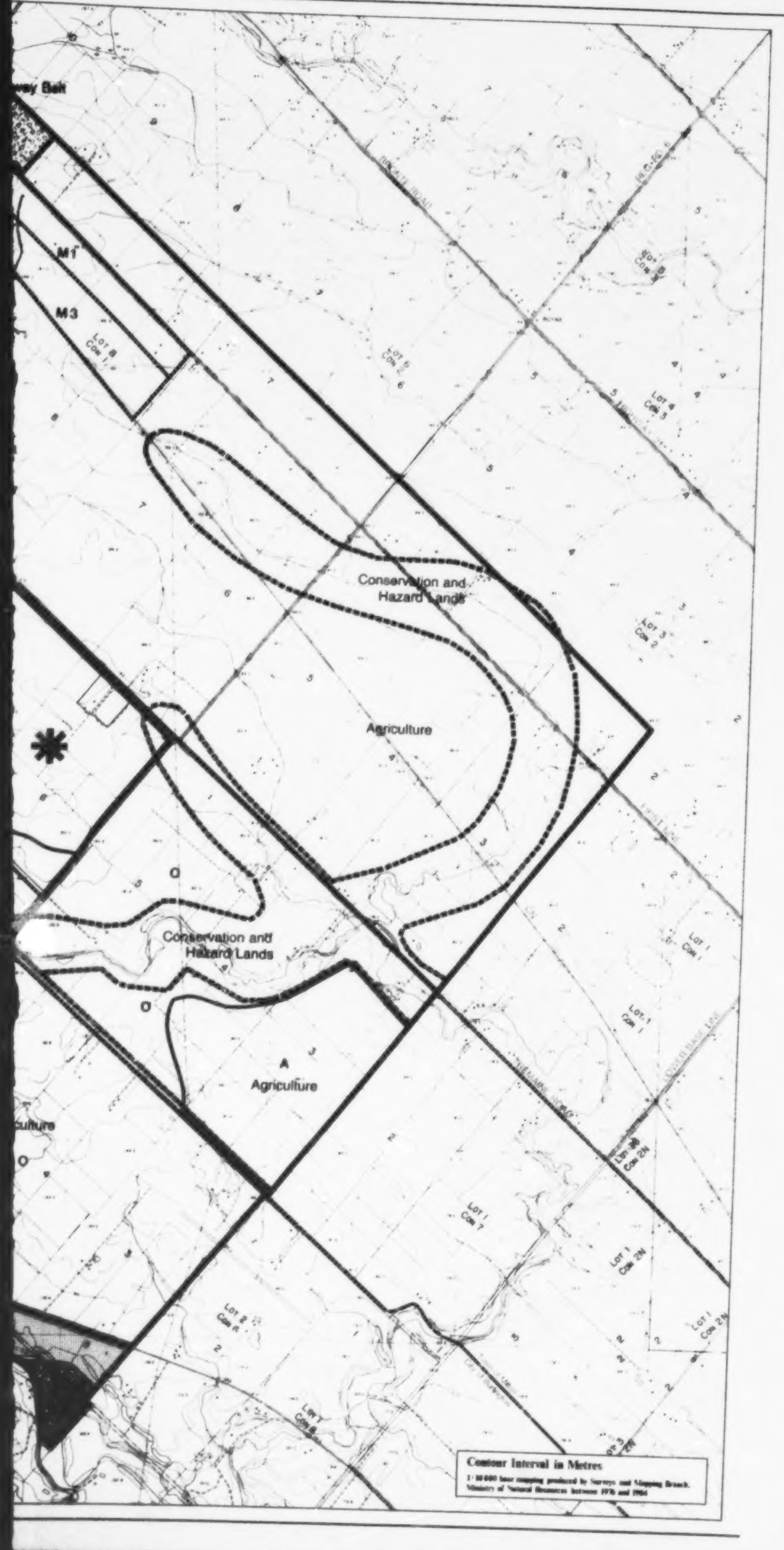
1000 feet 0 1000
500 metres 0 500

Existing Land Use and Land Ownership

November 1985

Figure 3.3


Milton Urban Area
Parkway Belt
M2
M2
M2
M1
M3
Agriculture
Conservation and Hazard Lands
O
Agriculture
A
O
Agriculture
A
Agriculture
O
O
Indian Creek
Lot 8 Con 6
Limestone Creek
Agriculture
O
Lot 6 Con 5
Lot 7 Con 4
Natural Resources
Bronte Creek


Parkway Belt
M1
M3
Lot 8 Con 1
Lot 6 Con 2
Lot 4 Con 3
Lot 3 Con 2
Conservation and Hazard Lands
Agriculture
O
Conservation and Hazard Lands
O
A
Agriculture
Agriculture
O
Lot 1 Con 1
Lot 1 Con 7
Lot 1 Con 2N
Lot 2 Con 8
Lot 1 Con 8

Contour Interval in Metres

1:10 000 base mapping produced by Surveys and Mapping Branch, Ministry of Natural Resources between 1978 and 1984

Ontario Waste Management Corporation

Consultant:

LEON KENTRIDGE ASSOCIATES LTD.

Marshall Macklin Monaghan Limited

Legend:

Area Municipality Official Plan

— Agriculture	— Milton Urban Area
— Conservation & Hazard Lands	— Natural Resources
— Parkway Belt	✱ Waste Disposal Site

Zoning By-Law

Town of Milton	M3 Heavy Industrial
A Agricultural	City of Burlington
M1 Light Industrial	
M2 Medium Industrial	O Conservation

Niagara Escarpment Commission

--- Limit of Control Area	▨ Escarpment Natural Area
☐ Escarpment Rural Area	▥ Escarpment Protection Area

Parkway Belt

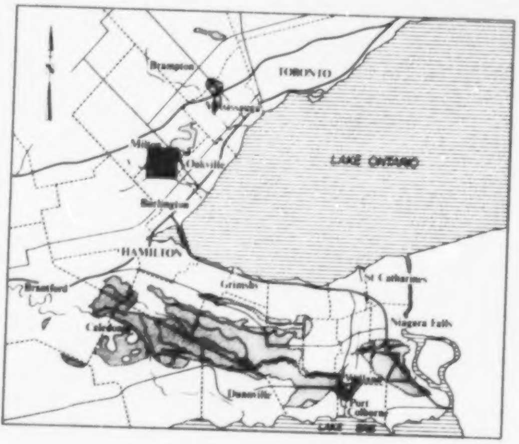
▨ Public Open Space & Buffer Area

— Phase 3B Acquisition Boundary — Site Vicinity Study Area Boundary

Key Map:

LF-4 North

Lots 6 and 7; Concession VII; Town of Milton, formerly in the Township of Nelson


Brampton
TORONTO
Mississauga
Milton
Oakville
LAKE ONTARIO
Burlington
HAMILTON
Brantford
Grimsby
St Catharines
Niagara Falls
Caledonia
Dunnville
Port Colborne
LAKE ERIE

See Report Appendix for Sources

1000 feet 0 1000
500 metres 0 500

Planning Status

November 1985

Figure 3.4

Existing Land Use

The existing use of the site is entirely rural and agricultural. There are 6 residences on site.

The site vicinity of LF-4N is predominantly rural but has approximately 130 residences, 4 commercial uses (restaurant, dog kennel, carpentry business and riding stable) and a light industrial use. There are almost 40 vacant lots of record in the site vicinity.

The 5 km community and regional area is largely rural but includes a large part of the residential area in the southern part of the urban area of Milton and the settlements of Lowville and Boyne.

Planned and Proposed Land Use

LF-4N is designated for Agricultural and Waste Disposal uses in the Town of Milton Official Plan. One hundred and five hectares of the site are zoned for sanitary waste disposal and the balance is for agricultural and conservation uses.

The principal proposal within the site is for a potential sanitary landfill of 105 ha. in area to be operated by the Region of Halton. This proposal is recognized by both the Town of Milton and the Region of Halton Official Plans.*

The site vicinity is predominantly Agriculturally designated in both the local and regional official plans, with the remainder being Niagara Escarpment and Conservation and Hazard lands. Land use designations in the 5 km area are similar except for several residential communities in the urban area of Milton with a population capacity in the order of 10 000 persons, some industrial lands in Milton, and the minor rural settlements of Lowville and Boyne.

Land Use Stability

Absentee ownership of the site is high. Farmland sales values in the Milton area have declined slightly (4%) over the 1980-1983 period.

---

* It should be noted, however, that the Region of Halton is currently engaged in a process to select a landfill site which may or may not confirm the Sanitary Landfill designation of site LF-4N.

Provincial Policies and Plans

The Niagara Escarpment Plan designates about 15% of the site vicinity for complementary open space uses and scarp protection areas. The site is unaffected by the Parkway Belt West Plan.

P1-1N

Site Location

P1-1N, prior to the refinement of site boundaries, was a 378 ha site located in the western part of the Town of Milton. It is bounded on the northwest by Britannia Road West, the northeast by Bronte Road and the southwest by C.N. Rail.

P1-1N has been identified as a potential physical/chemical treatment plant and incinerator site.

Existing Land Use

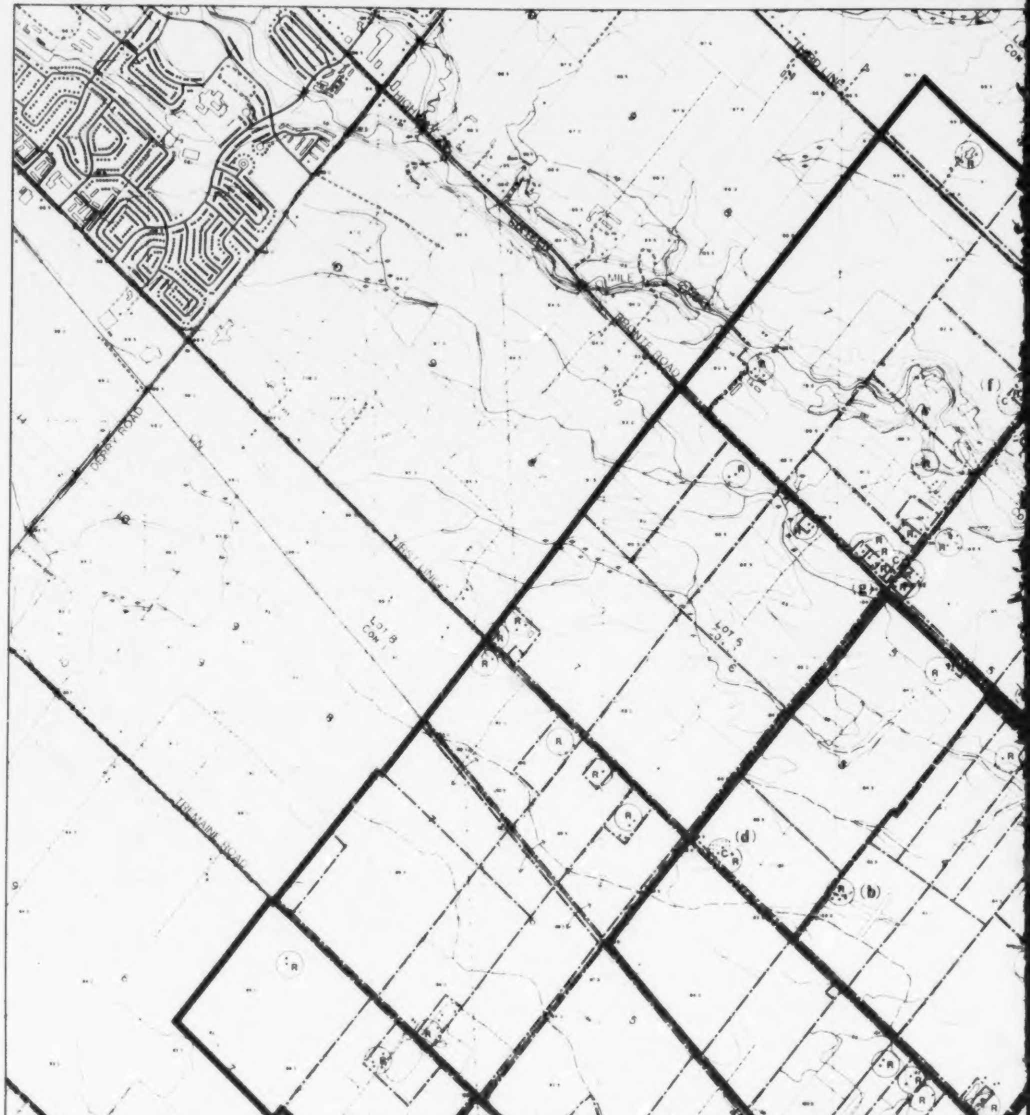
The existing use of the site is predominantly rural (see Table C.2 in Appendix C). There are 12 residences and 2 commercial uses (an automobile repair garage and a riding stable) on site.

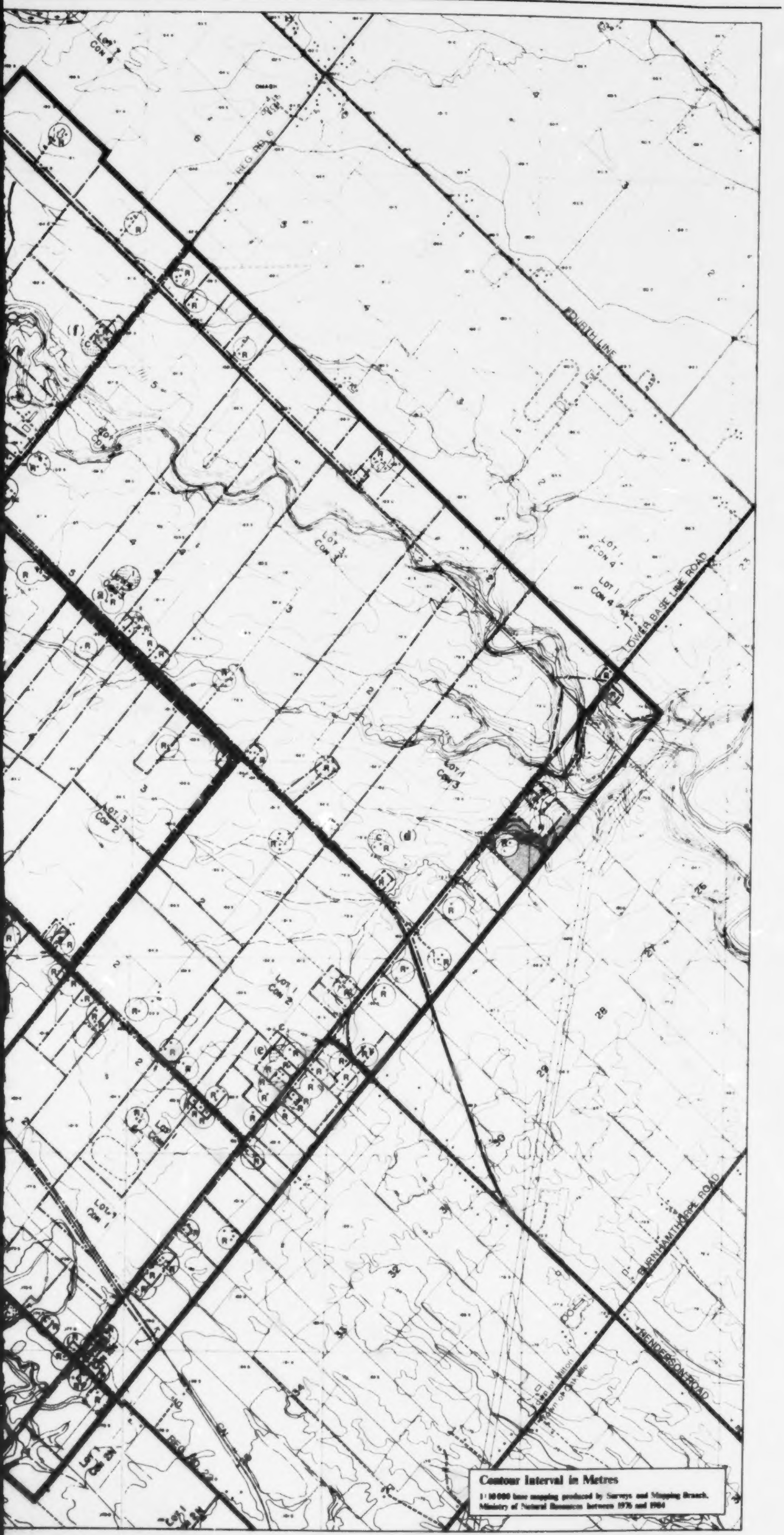
The site vicinity of P1-1N is predominantly rural but has over 100 residences and 7 commercial uses, including 4 riding stables, a tow truck and a television antenna repair service, and a barn painting business. An industrial use (Vital Abattoir) also exists.

The community and regional area is largely rural but includes residential areas within the southern part of urban Milton and the rural settlement of Omagh.

Proposed and Planned Land Use

The site is entirely zoned Agricultural. P1-1N is designated for Agricultural uses in the Town of Milton Official Plan. There are 10 vacant lots of record but no current development proposals on site.


THIRD LINE
HIGHWAY
DERRY ROAD
FIRST LINE
LOT 8 CON
LOT 5
TREMAINE ROAD
BELL SCHOOL LINE
BRITANNIA ROAD
(f)
(d)
(b)
(b)
(c)
R


FOURTH LINE
LOWER BASE LINE ROAD
BURNHAMTHORPE ROAD
HENDERSON ROAD
LOT 1 CON 4
LOT 1 CON 3
LOT 3 CON 2
LOT 1 CON 2
LOT 1 CON 1
(d)
(e)
(f)

Contour Interval in Metres

1:10 000 base mapping produced by Surveys and Mapping Branch, Ministry of Natural Resources between 1976 and 1984

OWMC **Ontario Waste Management Corporation**

Consultant:

LEON KENTRIDGE ASSOCIATES LTD.

Marshall Macklin Monaghan Limited

Legend:

Existing Land Use

- Ⓡ **Residential**
- Ⓒ **Commercial**
- Ⓘ **Industrial**

Land Ownership

- -·-·- **Property Boundary**
- ☐ **Publicly Held Land**

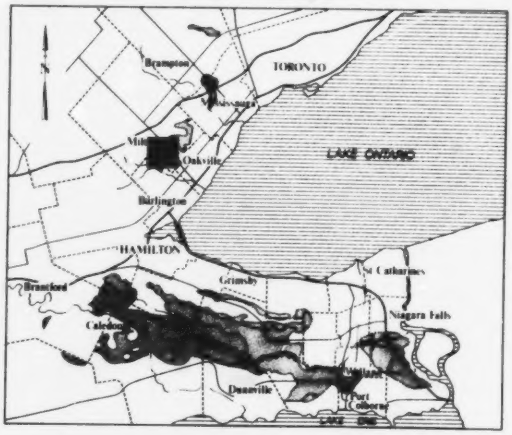
Notes

(a)	Vital Abattoir Ltd
(b)	Airfield
(c)	Painting Business
(d)	Riding Stables
(e)	Tow Truck Repairs
(f)	T.V. Antenna Service
(g)	Excavating Business

- ▬ ▬ Proposed Acquisition Boundary
- ▬▬ Phase 3B Acquisition Boundary
- ▬▬ Site Vicinity Study Area Boundary

Key Map: **PI-1 North**

Lots 3, 4 and 5; Concession II; Town of Milton; Parts of Lots 3, 4 and 5; Concession I; Town of Milton, formerly in the Township of Trafalgar

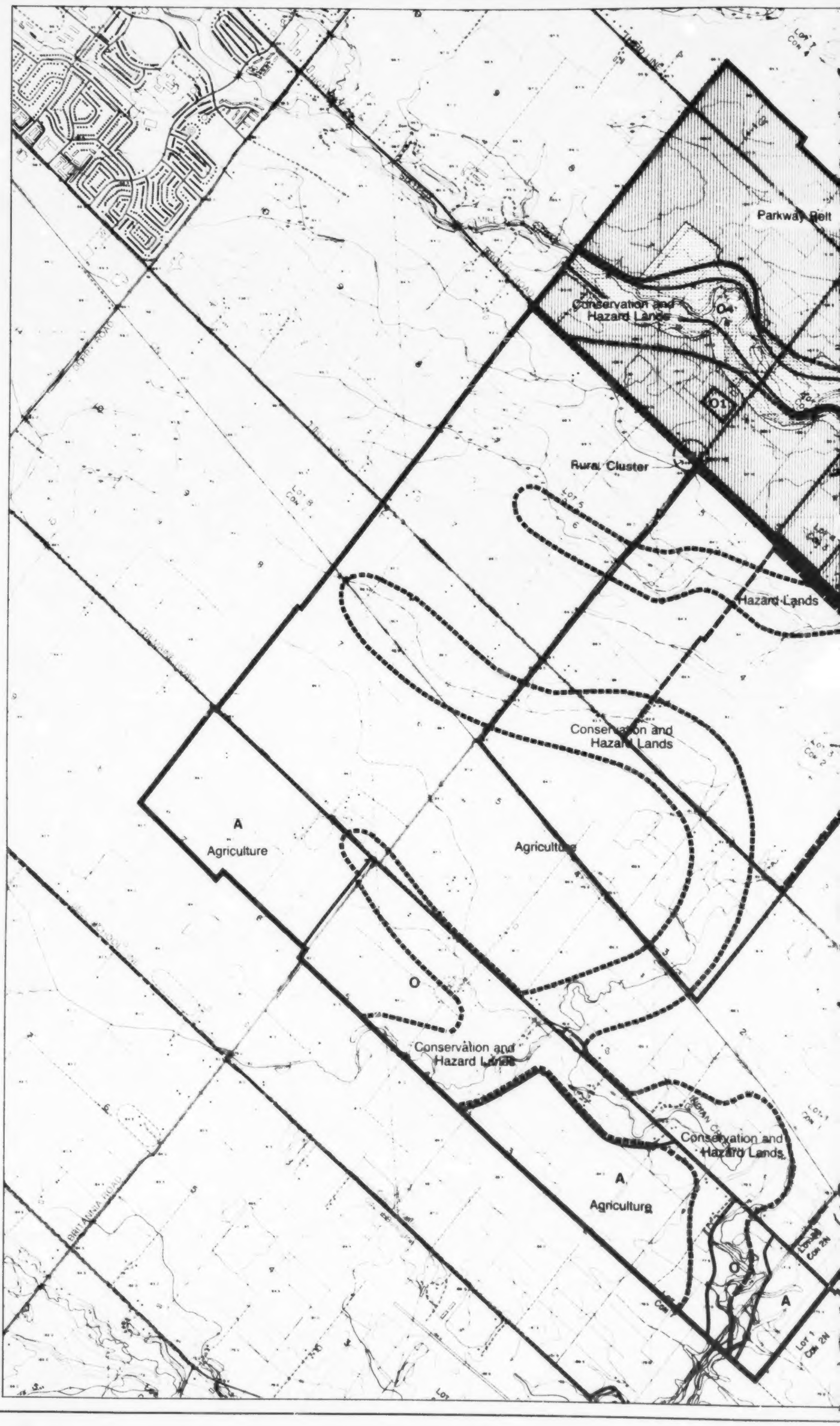

N
Brampton
TORONTO
Mississauga
Milton
Oakville
LAKE ONTARIO
Burlington
HAMILTON
Brantford
Grimsby
St Catharines
Niagara Falls
Caledonia
Dunnville
Welland
Port Colborne
LAKE ERIE

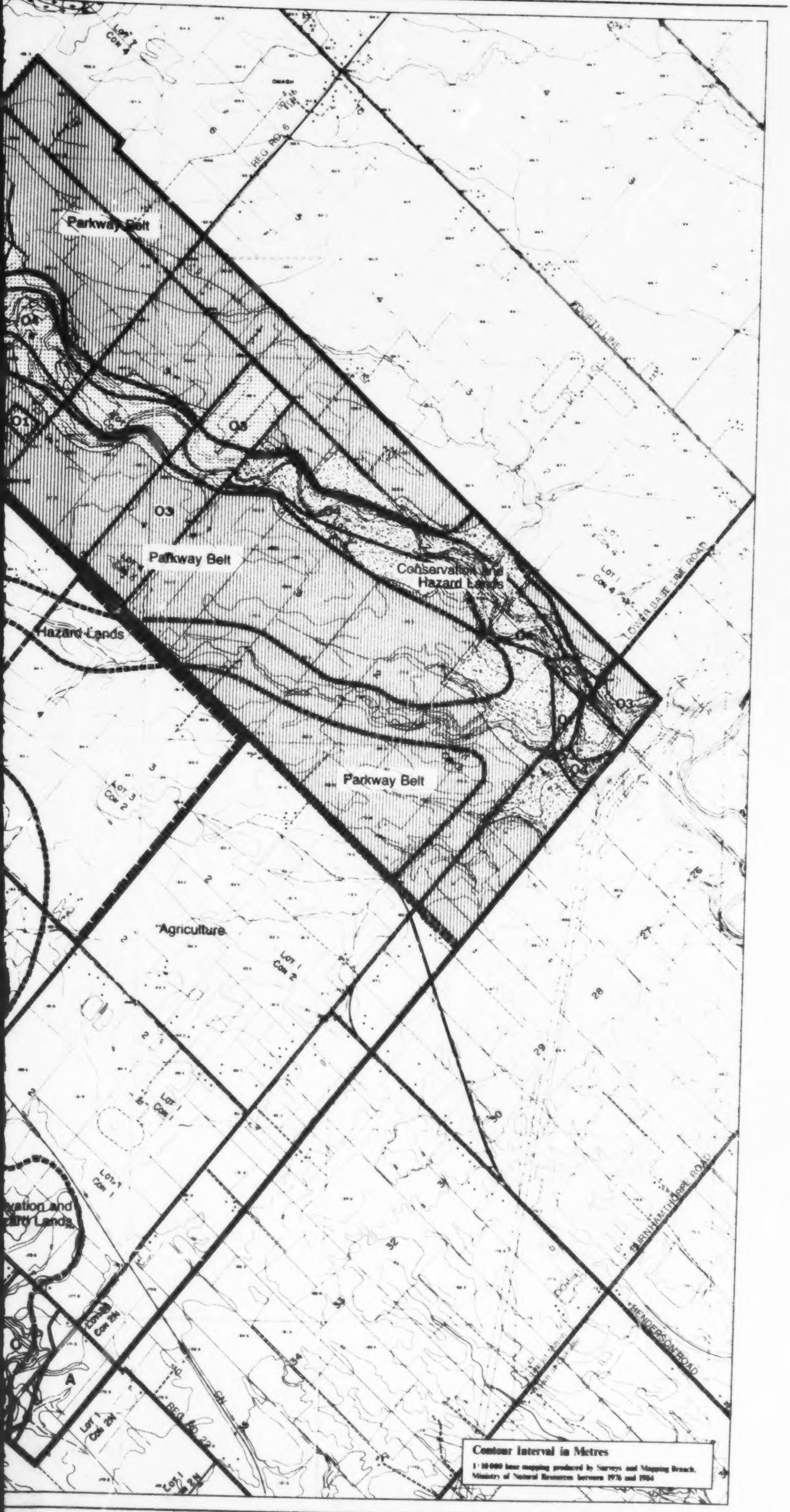
See Report Appendix for Sources

1000 feet 0 1000
500 metres 0 500

Existing Land Use and Land Ownership

November 1985 **Figure 3.5**


Parkway Belt
Conservation and Hazard Lands
O4
O1
Rural Cluster
Lot 5
Lot 8 Con
Hazard Lands
Conservation and Hazard Lands
A
Agriculture
Agriculture
O
Conservation and Hazard Lands
Conservation and Hazard Lands
A
Agriculture
O
A
Britannia Road
Lot 1 Con 2N


Parkway Belt
REG. RD. 6
FOURTH LINE
O1
O3
O4
Parkway Belt
Conservation and Hazard Lands
Hazard Lands
O3
Parkway Belt
LOT 3 CON 2
Agriculture
LOT 1 CON 2
LOT 1 CON 1
LOT 1 CON 4
LOWER BASE LINE ROAD
BURNHAMTHORPE ROAD
HENDERSON ROAD
REG. RD. 22
Conservation and Hazard Lands
A
26
27
28
29
30
32
33

Contour Interval in Metres

1:10 000 base mapping produced by Surveys and Mapping Branch, Ministry of Natural Resources between 1976 and 1984

OWMC Ontario Waste Management Corporation

Consultant:
LEON KENTRIDGE ASSOCIATES LTD.
Marshall Macklin Monaghan Limited

Legend:

Area Municipality Official Plan

- Agriculture
- Conservation & Hazard Lands
- Parkway Belt
- Rural Cluster

Zoning By-Law

- Agricultural
- O1 Public Open Space
- O3 Semi Public Open Space
- O4 Conservation
- A Agricultural
- O Conservation

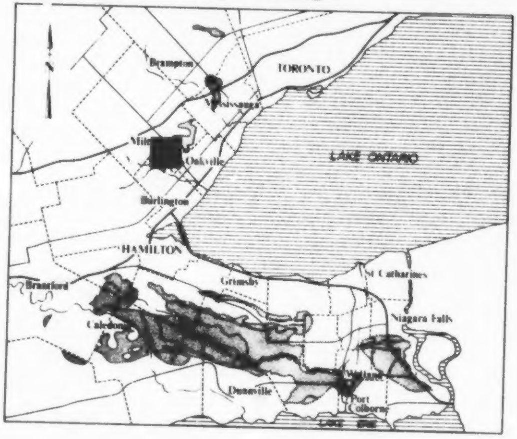
Parkway Belt

- Limit of Planning Area
- General Complementary Use
- Special Complementary Use
- Public Open Space & Buffer Area

- Proposed Acquisition Boundary
- Phase 3B Acquisition Boundary
- Site Vicinity Study Area Boundary

Key Map: **PI-1 North**

Lots 3, 4 and 5; Concession II; Town of Milton; Parts of Lots 3, 4 and 5; Concession I; Town of Milton, formerly in the Township of Trafalgar


Brampton
TORONTO
Mississauga
Milton
Oakville
LAKE ONTARIO
Burlington
HAMILTON
Grimsby
St Catharines
Brantford
Caledonia
Niagara Falls
Dunnville
Welland
Port Colborne
LAKE ERIE

See Report Appendix for Sources

1000 feet 0 1000
500 metres 0 500

Planning Status

November 1985

Figure 3.6

The site vicinity is designated almost entirely Agricultural and Parkway Belt uses, except for the Rural Cluster of Boyne, which abuts the site.

The community and regional area includes residential communities in the southern part of urban Milton, with an ultimate capacity of over 10 000 persons. Most of the study area is designated for Agriculture and Parkway Belt uses.

Land Use Stability

Half of the properties on the site are subject to absentee land ownership. As in the case of LF-4N, farmland sales values have declined slightly (4%) in the Milton area over the 1980-1983 period.

Provincial Policies and Plans

The site is affected by the Parkway Belt West Plan, which designates lands in both the site vicinity and community and regional areas for public and open space uses.

P1-13N

Site Location

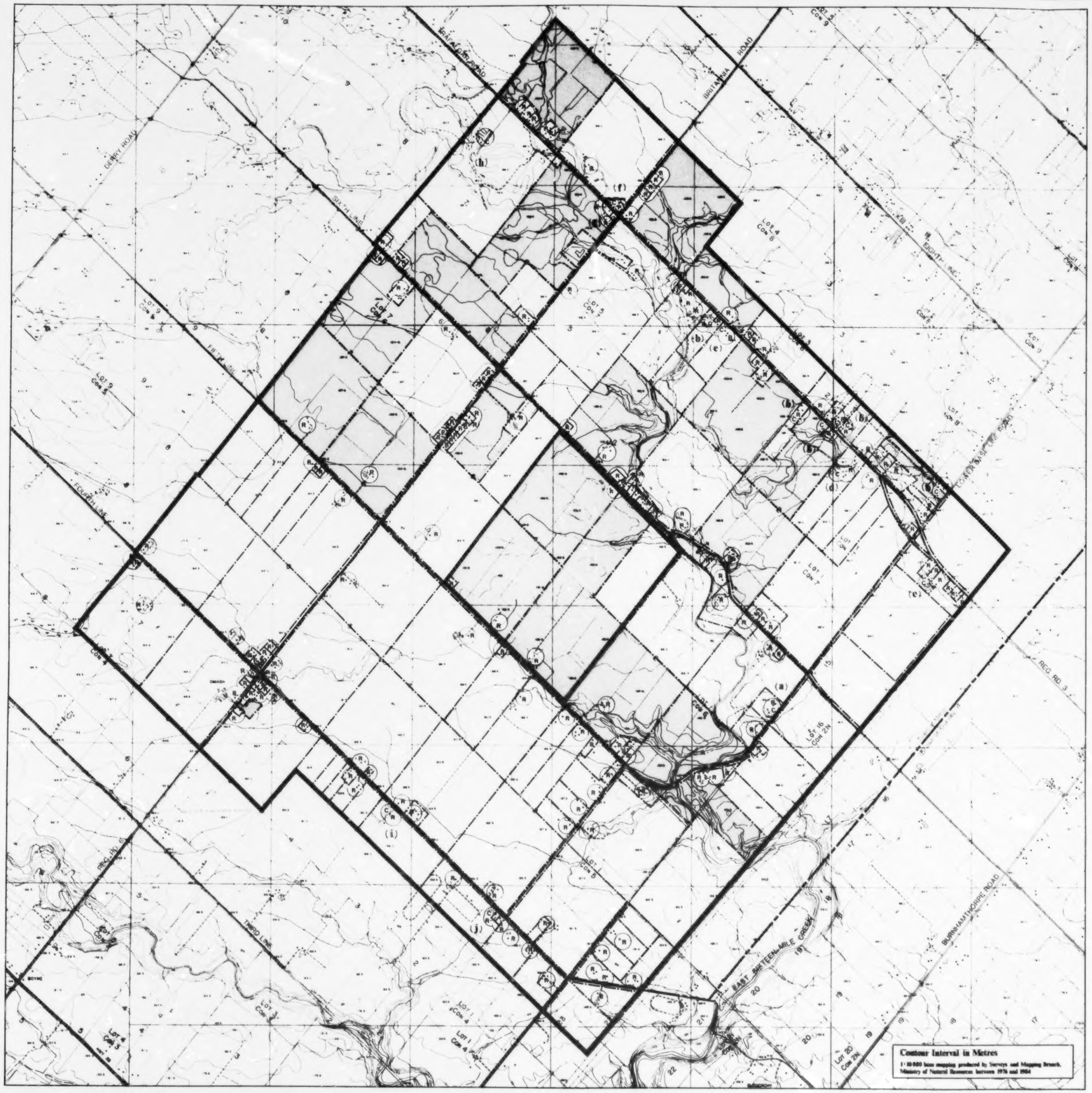
P1-13N is a 170 ha site located in the south-central part of the Town of Milton, south of Britannia Road West. It is bounded on the southwest by the Fifth Line and on the northeast by the Sixth Line.

P1-13N has been identified as a potential physical/chemical treatment plant and incinerator site.

Existing Land Use

The existing use of the site is agricultural. There are 4 residences on site.

The site vicinity of P1-13N is predominantly rural but has approximately 170 residences and 14 commercial uses. Several of the commercial uses are agriculture-related (nurseries, tree farms, riding stables), but others include automobile service stations and several home-businesses such as construction, catering and optical dispensing businesses.


DERRY ROAD
SIXTH LINE
FIFTH LINE
FOURTH LINE
THIRD LINE
TRAFALGAR ROAD
BRITANNIA ROAD
EIGHTH LINE
LOWER BASE LINE ROAD
REG. RD. 3
BURNHAMTHORPE ROAD
EAST SIXTEEN MILE CREEK
BOYNE
(a)
(b)
(c)
(d)
(e)
(f)
(h)
(i)
(j)

Contour Interval in Metres

1:10 000 base mapping produced by Surveys and Mapping Branch, Ministry of Natural Resources between 1976 and 1984

Ontario Waste Management Corporation

Consultant:

LEON KENTRIDGE ASSOCIATES LTD.

Marshall Macklin Monaghan Limited

Legend:

Existing Land Use

- Ⓡ Residential
- Ⓒ Commercial
- Ⓘ Industrial

Land Ownership

- -·-·- Property Boundary
- ☐ Publicly Held Land

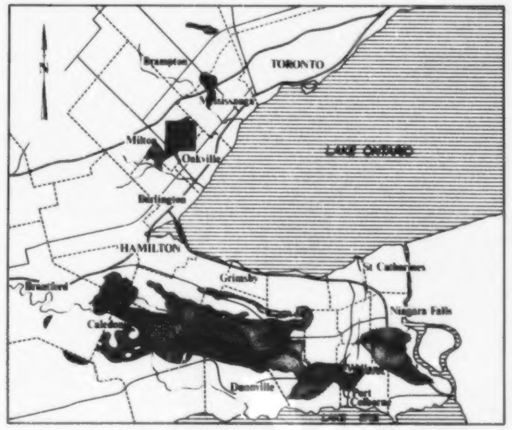
Notes

(a) Automotive Repair Service
(b) Nursery/Tree Farm
(c) Boat Storage
(d) Timm Enterprises
(e) Doll Gallery
(f) Optical Dispensary
(g) Service Station/Store
(h) Riding Stables
(i) Food Catering Business
(j) Construction Business

━ Phase 3B Acquisition Boundary
▬ Site Vicinity Study Area Boundary

Key Map: PI-13 North

Lots 3 and 4; Concession VI; Town of Milton, formerly the Township of Trafalgar

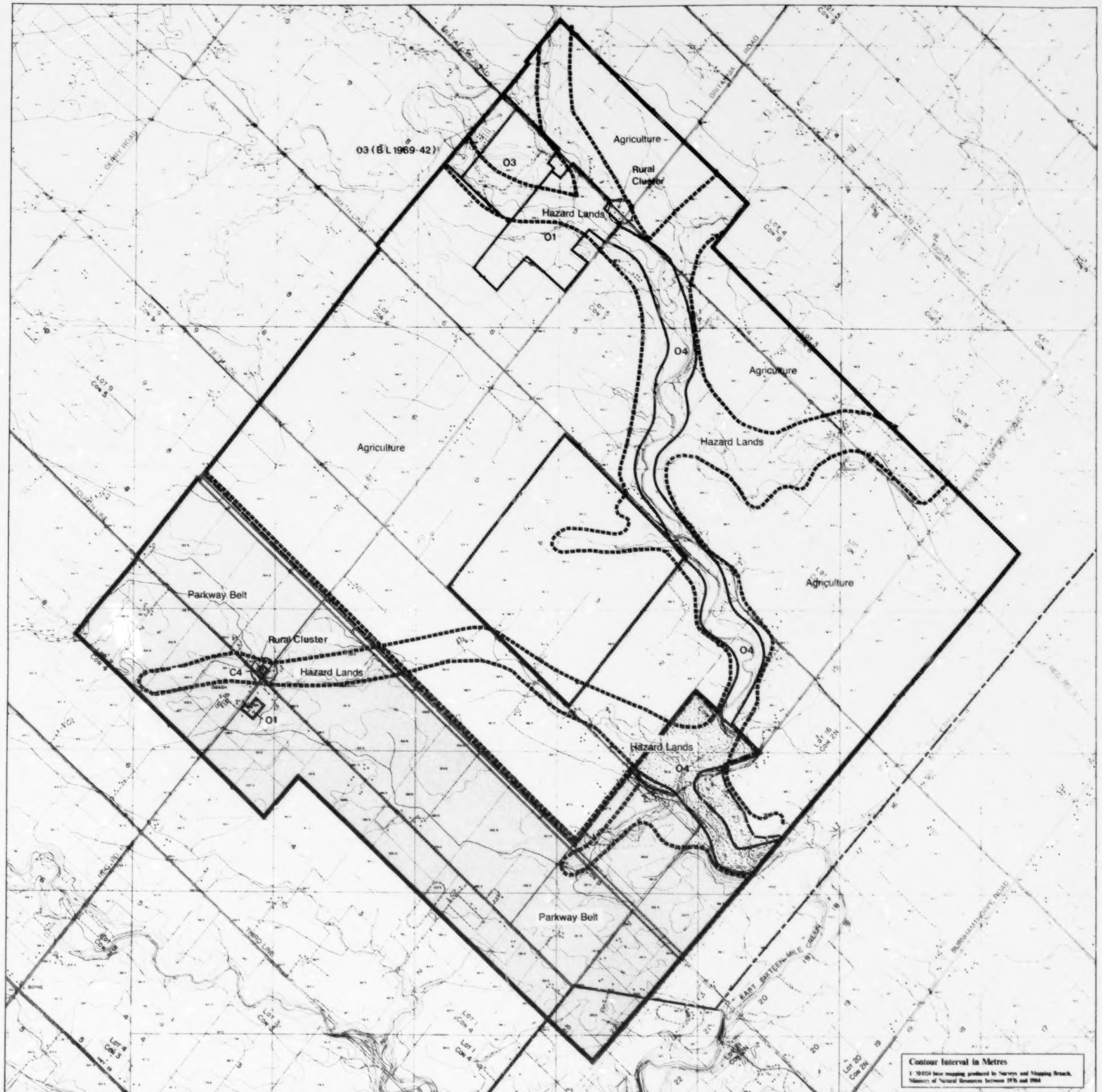

N
Brampton
TORONTO
Mississauga
Milton
Oakville
LAKE ONTARIO
Burlington
HAMILTON
St Catharines
Grimsby
Brantford
Niagara Falls
Caledonia
Dunnville
Welland
Port Colborne

See Report Appendix for Sources

1000 feet 0 1000
500 metres 0 500

Existing Land Use and Land Ownership

November 1985 Figure 3.7


03 (B L 1969-42)
O3
Agriculture
Rural Cluster
Hazard Lands
O1
O4
Agriculture
Hazard Lands
Agriculture
Agriculture
Parkway Belt
Rural Cluster
C4
Hazard Lands
O1
O4
Hazard Lands
O4
Parkway Belt
THIRD LINE
EAST SIXTEEN MILE CREEK
BURNHAMTHORPE ROAD
BRITANNIA ROAD

Contour Interval in Metres

1:10 000 base mapping produced by Surveys and Mapping Branch, Ministry of Natural Resources between 1978 and 1984

Ontario Waste Management Corporation

Consultant:

LEON KENTRIDGE ASSOCIATES LTD

Marshall Macklin Monaghan Limited

Legend:

Area Municipality Official Plan

- - - - - - Agriculture
- - - - - - Conservation & Hazard Lands
- - - - - - Parkway Belt
◌ Rural Cluster

Zoning By-Law

☐	Agricultural	O1	Public Open Space
C4	Rural Commercial	O3	Semi Public Open Space
		O4	Conservation

Parkway Belt

— — — Limit of Planning Area
▤ Road (Dorval Way)
▨ Public Open Space & Buffer Area
☐ General Complementary Use Area

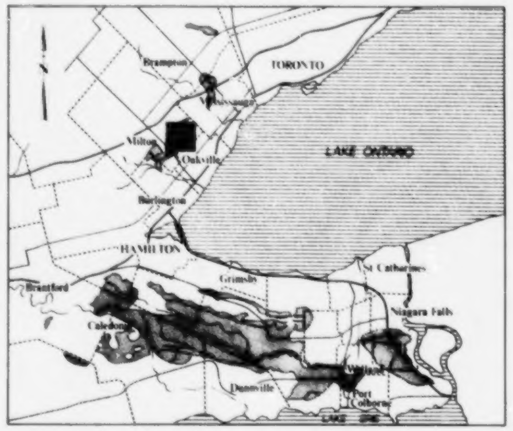
Notes

03 (B L 1969-42 Oakville) - Permits Additional Dwelling and Riding Stable Facilities

━━ Phase 3B Acquisition Boundary
▬▬ Site Vicinity Study Area Boundary

Key Map: **PI-13 North**

Lots 3 and 4; Concession VI; Town of Milton, formerly the Township of Trafalgar


Brampton
TORONTO
Mississauga
Milton
Oakville
LAKE ONTARIO
Burlington
HAMILTON
St Catharines
Grimsby
Brantford
Niagara Falls
Caledonia
Welland
Dunnville
Port Colborne
LAKE ERIE

See Report Appendix for Sources

1000 feet 0 1000
500 metres 0 500

Planning Status

The 5 km community and regional area is largely rural but includes the rural settlements of Drumquin and Omagh.

Proposed and Planned Land Use

The site is zoned Agricultural. The official plan designates P1-13N almost entirely Agricultural with the balance designated Conservation and Hazard Lands. There are no development proposals on the site.

The site vicinity is predominantly Agricultural in designation, with most of the balance in Parkway Belt or Conservation and Hazard Land uses. The Rural Clusters of Drumquin and Omagh are within the site vicinity.

The community and regional land use designations are similar to those of the site vicinity; the Rural Cluster of Boyne falls within this area.

Land Use Stability

The majority of the site is publicly owned by the Ontario Land Corporation. Milton area farmland values have declined slightly (4%) over the 1980-1983 period.

Provincial Policies and Plans

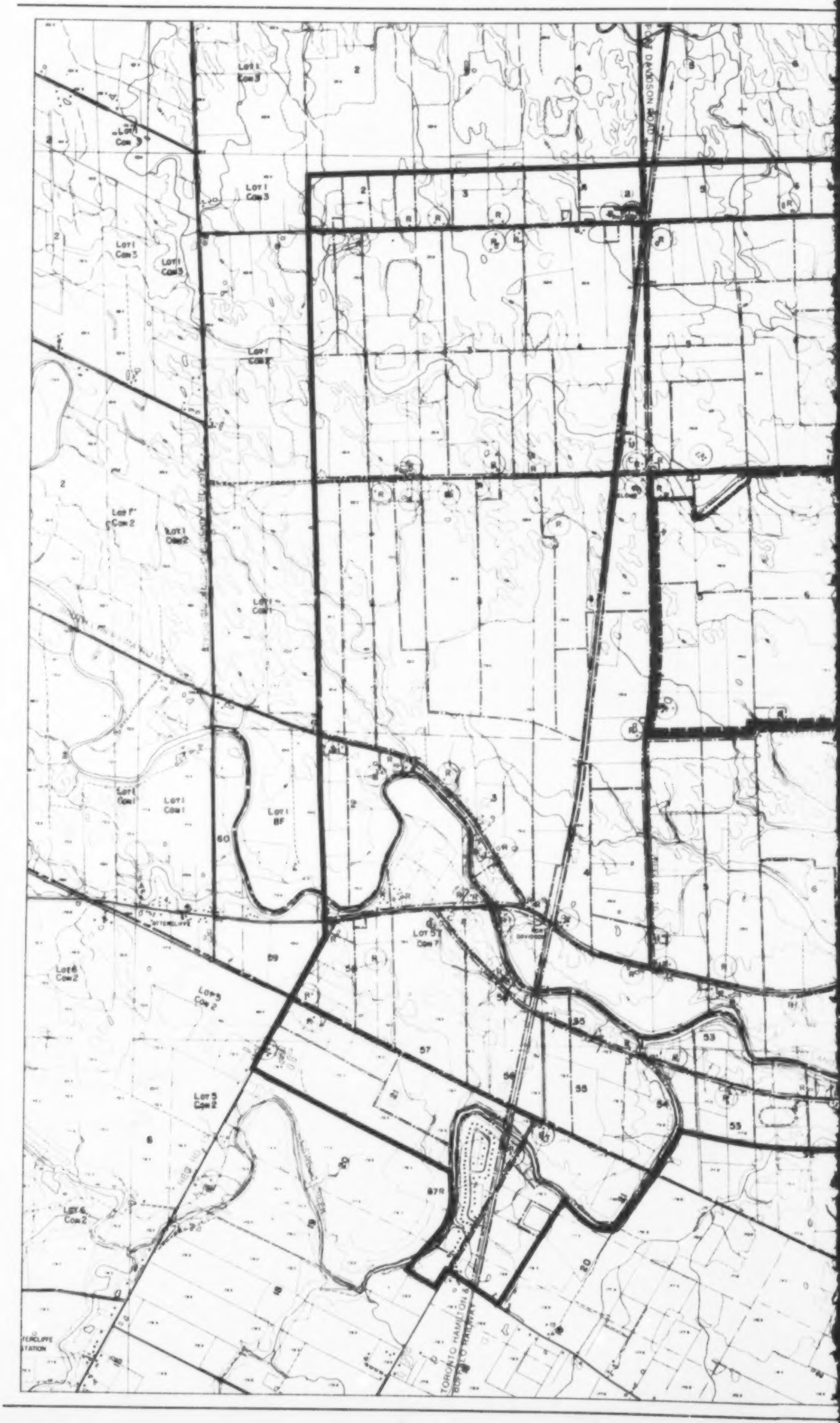
The site is affected by the Parkway Belt West Plan, which designates lands in both the site vicinity and community and regional areas for public and open space uses.

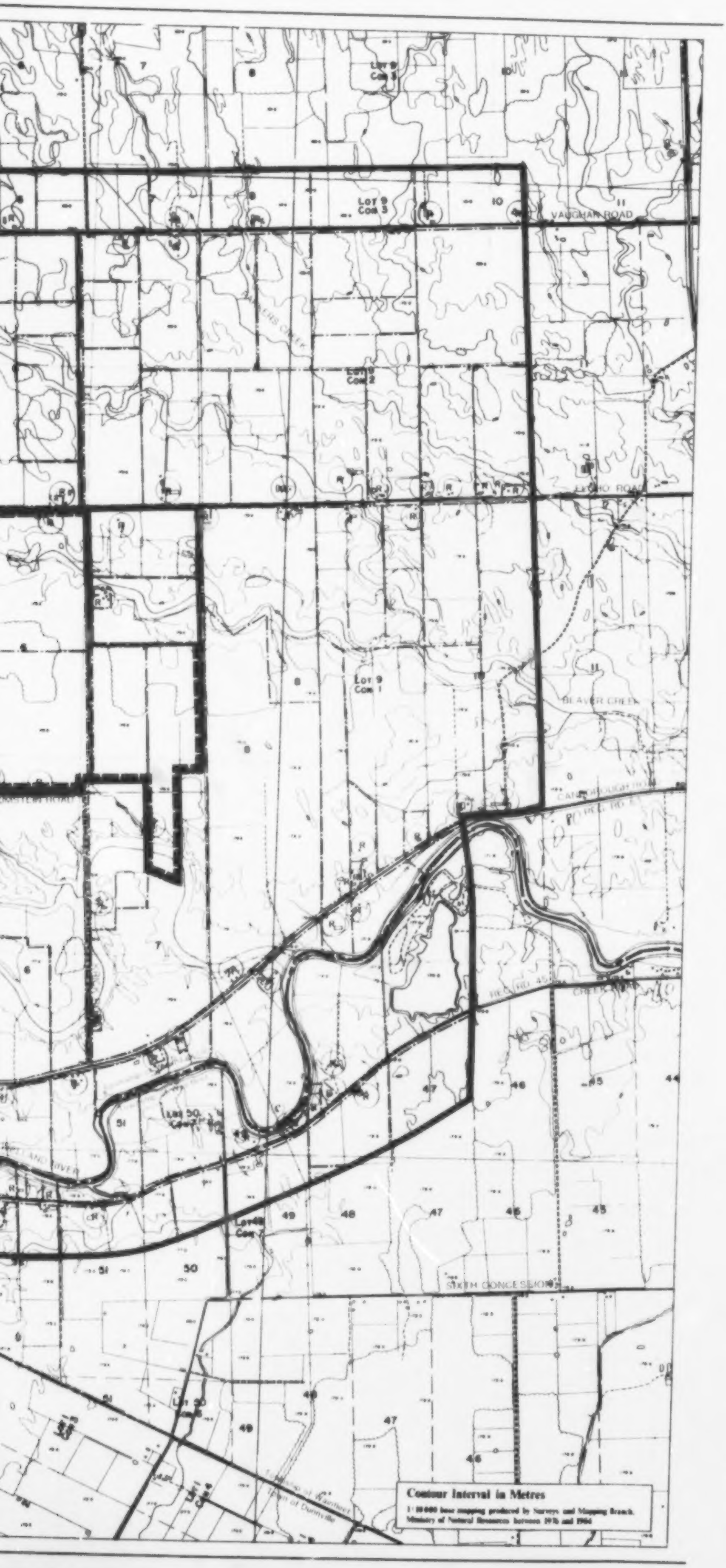
LF-3C

Site Location

LF-3C, prior to the refinement of site boundaries, was a 259 ha site located in the south-central part of the Township of West Lincoln. It is bounded on the north by Elcho Road, the east by a Hydro-Electric Power Commission (H.E.P.C.) line, the south (partially) by Zumstein Road and the west by Regional Road 16.

LF-3C has been identified as a potential integrated site for all facilities.


DAVIDSON ROAD
Lot 1 Con 3
Lot 1 Con 3
Lot 1 Con 3
Lot 1 Con 3
Lot 1 Con 2
Lot 1 Con 2
Lot 1 Con 2
Lot 1 Con 1
Lot 1 Con 1
Lot 1 Con 1
Lot 1 BF
60
59
58
57
56
55
54
53
53
Lot 57 Con 7
Lot 6 Con 2
Lot 5 Con 2
Lot 5 Con 2
Lot 6 Con 2
57R
20
TORONTO HAMILTON & BUFFALO RAILWAY
TERCLIFFE STATION


Lot 9 Con 3
VAUGHAN ROAD
Lot 9 Con 2
ECHO ROAD
Lot 9 Con 1
BEAVER CREEK
GAINSBOROUGH ROAD
REG. RD. 45
WELLAND RIVER
SIXTH CONCESSION
Town of Dunnville

Contour Interval in Metres

1:10000 base mapping produced by Surveys and Mapping Branch, Ministry of Natural Resources between 1976 and 1984

OWMC Ontario Waste Management Corporation

Consultant:

LEON KENTRIDGE ASSOCIATES LTD.

Marshall Macklin Monaghan Limited

Legend:

Existing Land Use

(R)	Residential
(C)	Commercial
(I)	Industrial

Land Ownership

—·—	Property Boundary
▭	Publicly Held Lands

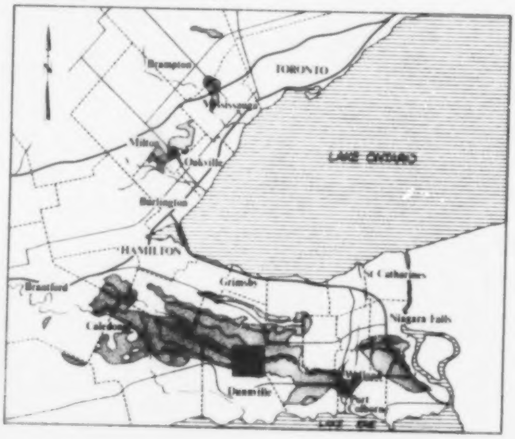
Notes

a) Farm Seed Sales
b) Transmission Repairs
c) Kennel
d) Farm Equipment

▬ ▬	Proposed Acquisition Boundary
▬▬	Phase 3B Acquisition Boundary
▬▬	Site Vicinity Study Area Boundary

Key Map: **LF-3 Central**

Lots 5, 6 and 7; Concession 1; Part of Lot 7; Broken Front Concession; Township of West Lincoln; formerly in the Township of Gainsborough


Brampton
TORONTO
Mississauga
Milton
Oakville
LAKE ONTARIO
Burlington
HAMILTON
Brantford
Grimsby
St Catharines
Niagara Falls
Caledonia
Dunnville
LAKE ERIE

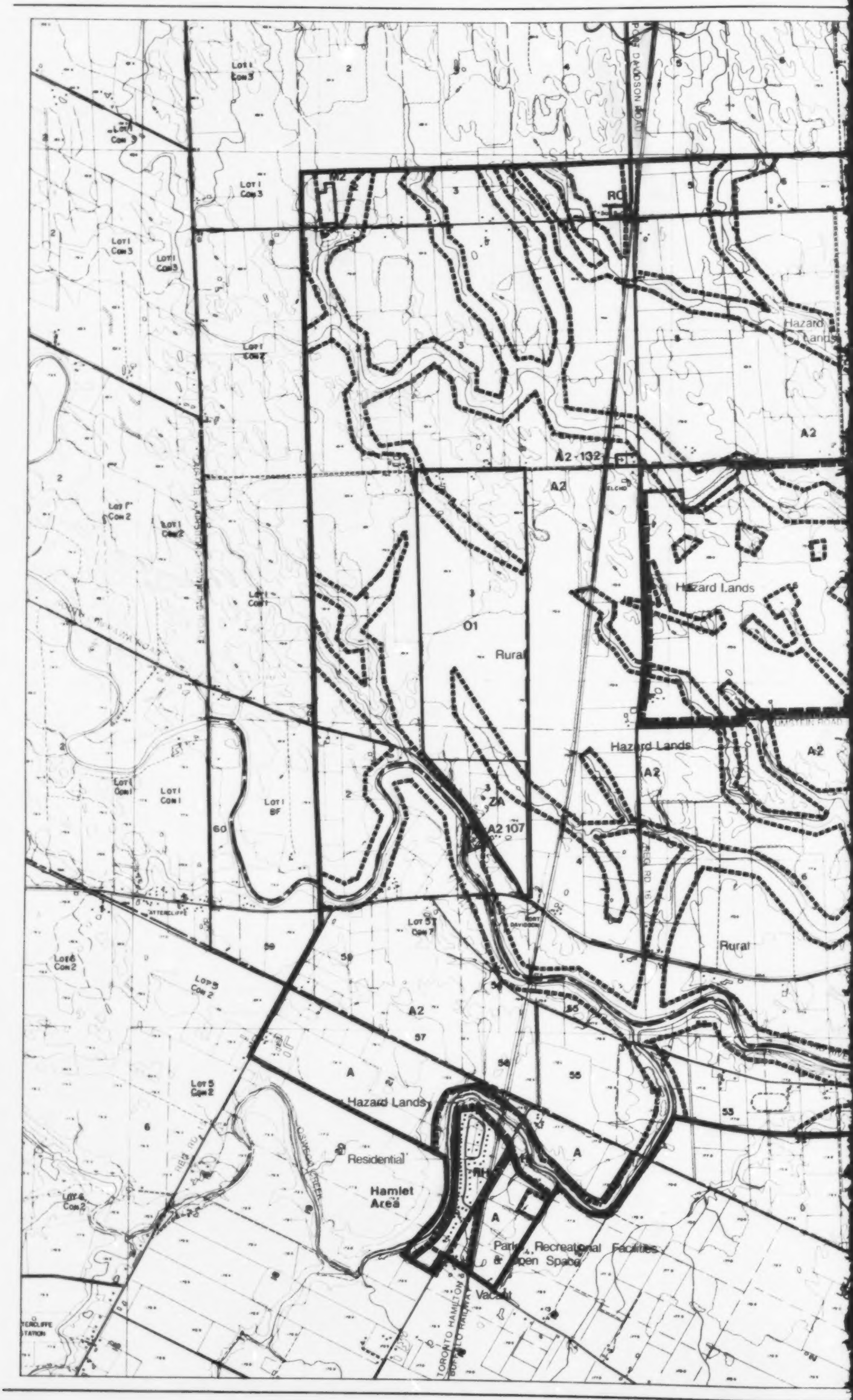
See Report Appendix for Sources

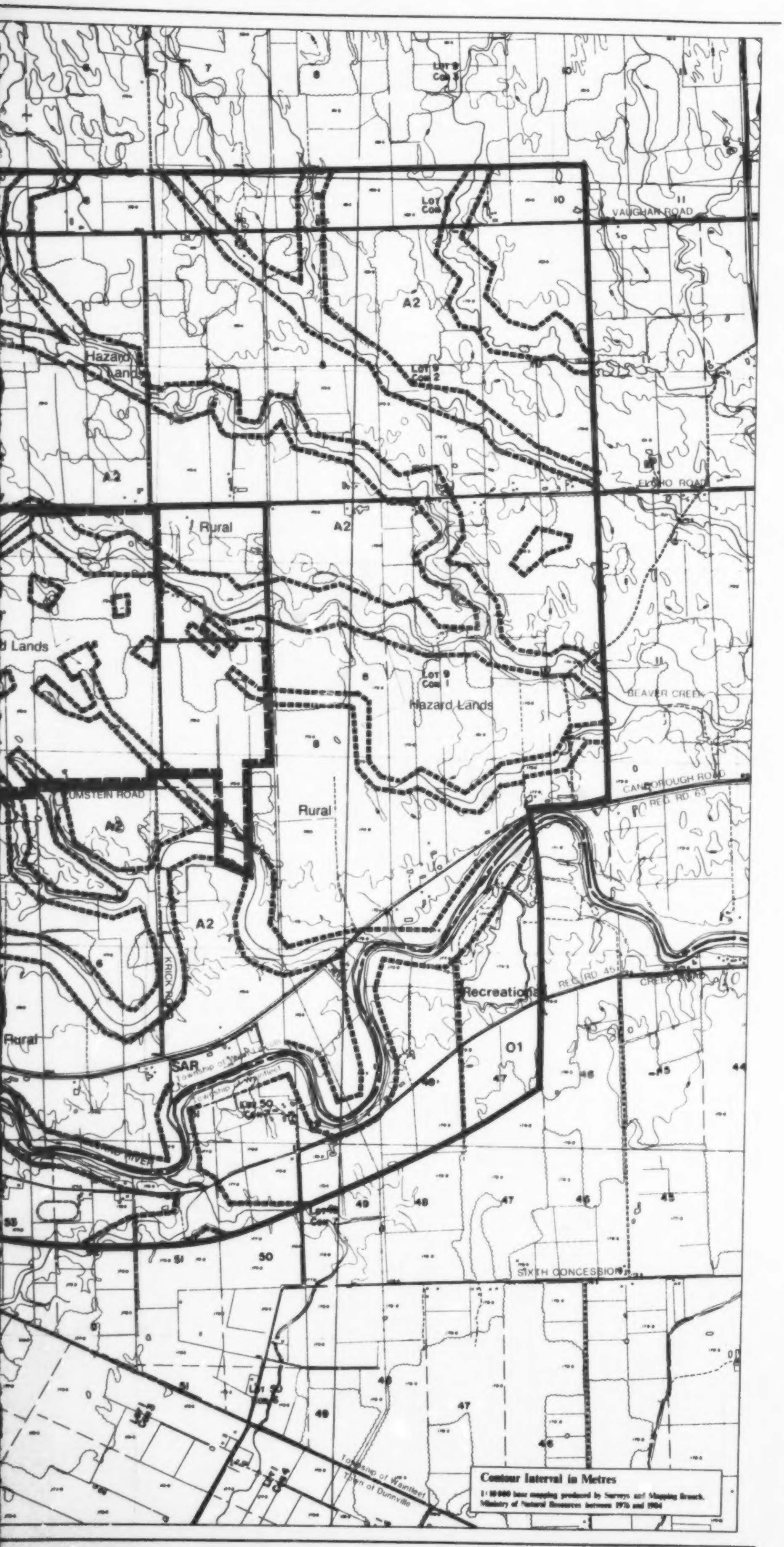
1000 feet 0 1000
500 metres 0 500

Existing Land Use and Land Ownership

November 1985

Figure 3.9

Lot 1 Con 3
Lot 1 Con 2
Lot 1 Con 1
Lot 1 BF
Lot 5 Con 7
Lot 5 Con 2
Lot 6 Con 2
Port Davidson Road
RC
A2
A2-132
Hazard Lands
O1
Rural
ZA
A2 107
A
Residential
Hamlet Area
RH
Parks, Recreational Facilities & Open Space
Vacant
Toronto Hamilton & Buffalo Railway
Attercliffe
Attercliffe Station
Port Davidson
60
59
58
57
56
55
54
53



Lot 9 Con 3
7
8
10
11
VAUGHAN ROAD
Lot Con
A2
Hazard Lands
Lot 9 Con 2
ECHO ROAD
Rural
A2
Lands
Lot 9 Con 1
BEAVER CREEK
Hazard Lands
CANBOROUGH ROAD
REG RD 63
RUMSTEIN ROAD
Rural
A2
KRICK RD
Recreational
REG RD 45
CREEK ROAD
O1
SAR
Township of Wainfleet
GRAND RIVER
Lot 50 Con
Rural
47
46
45
44
48
49
50
51
SIXTH CONCESSION
Lot 50
Township of Wainfleet
Town of Dunnville

Contour Interval in Metres

1:10 000 base mapping produced by Surveys and Mapping Branch, Ministry of Natural Resources between 1976 and 1984

OWMC Ontario Waste Management Corporation

Consultant:

LEON KENTRIDGE ASSOCIATES LTD

Marshall Macklin Monaghan Limited

Legend:

Area Municipality Official Plan

Rural
Hazard Lands
Recreational
Hamlet Area Residential

Zoning By-Law

A2 Agricultural
M2 Public Industrial
RC Rural Commercial
O1 Open Space
RH Residential Hamlet
A Agricultural Hazard Lands

Development Application

SAR Severence ● Residential
ZA Zoning Amendment

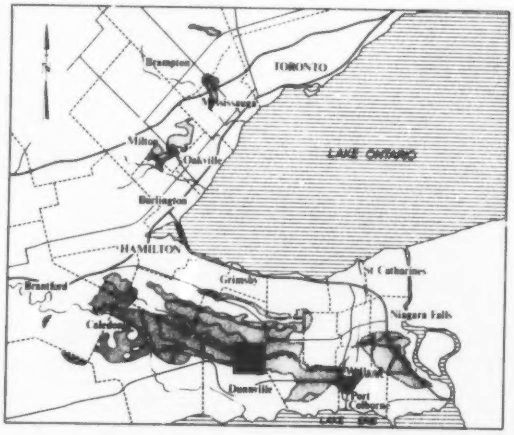
Notes

A2-107 Saw Mill
A2-132 Auto repair shop
ZA* Robert Land Academy

Proposed Acquisition Boundary
Phase 3B Acquisition Boundary
Site Vicinity Study Area Boundary

Key Map: LF-3 Central

Lots 5, 6 and 7; Concession I; Part of Lot 7; Broken Front Concession; Township of West Lincoln; formerly in the Township of Gainsborough



Brampton
TORONTO
Mississauga
Milton
Oakville
LAKE ONTARIO
Burlington
HAMILTON
Grimsby
St Catharines
Brantford
Niagara Falls
Caledonia
Dunnville
Welland
Port Colborne
LAKE ERIE

See Report Appendix for Sources

1000 feet 0 1000
500 metres 0 500

Planning Status

November 1985

Figure 3.10

Existing Land Use

The existing use of the site is predominantly rural or vacant (see Table C.3 in Appendix C). There are 9 residences on site.

The site vicinity of LF-3C is predominantly rural, but has approximately 170 residences and 4 commercial uses, including an agricultural equipment dealer, a seed farm, a dog kennel and an automobile repair shop. The site vicinity includes the rural settlement of Oswego Park.

The community and regional area is largely rural but includes all or part of 5 rural settlements: Wellandport, Bismarck, Winslow, Attercliffe and Moulton Station.

Proposed and Planned Land Use

The site is entirely zoned Agricultural. LF-3C is designated for Rural and Hazard Land uses in the Township of West Lincoln Official Plan.

The site vicinity is similarly designated, except for the Hamlet of Oswego Park which has a rural residential (Hamlet) designation. The community and regional designations are also predominantly Rural except for the five hamlet areas.

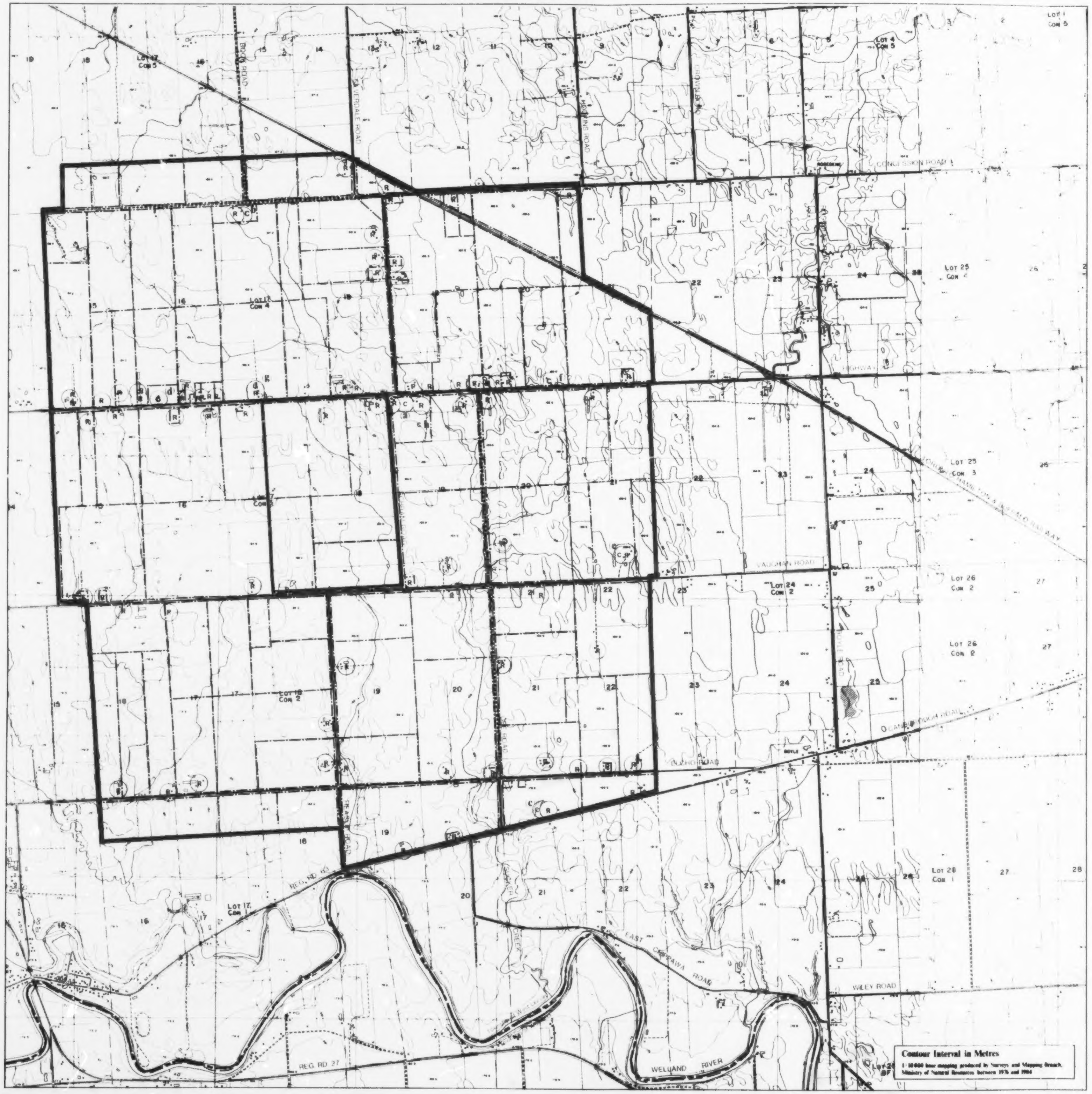
There are almost 40 vacant lots of record in the site vicinity. Approved development proposals include 2 single family houses and a new dormitory for a private school (Robert Land Academy).

Land Use Stability

Absentee ownership of the site is very low. West Lincoln farmland values have risen steadily over the 1980-1983 period, an overall increase of 28%.

Provincial Policies and Plans

The site is unaffected by either the Niagara Escarpment or Parkway Belt West Plans.


Lot 17 Con 5
Lot 4 Con 5
Lot 1 Con 5
CONCESSION ROAD 4
Lot 17 Con 4
Lot 25 Con 4
Lot 25 Con 3
Lot 26 Con 2
Lot 24 Con 2
Lot 26 Con 2
Lot 18 Con 2
VAUGHAN ROAD
BOYLE
Lot 17 Con 1
Lot 26 Con 1
REG RD 63
EAST CHIPPAWA ROAD
WILEY ROAD
REG RD 27
WELLAND RIVER

Contour Interval in Metres

1:10 000 base mapping produced by Surveys and Mapping Branch, Ministry of Natural Resources between 1976 and 1984

OWMC Ontario Waste Management Corporation

Consultant:

LEON KENTRIDGE ASSOCIATES LTD

Marshall Macklin Monaghan Limited

Legend:

Existing Land Use

- Ⓡ Residential
- Ⓒ Commercial
- Ⓘ Industrial

Land Ownership

- —·— Property Boundary
- ☐ Publicly Held Lands

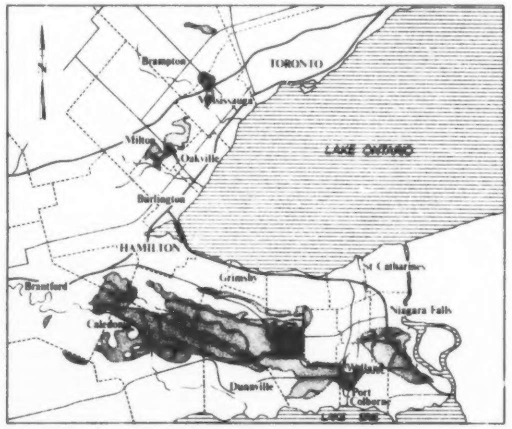
Notes

a) Books Garage
b) Auto Wreckers/Junkyard Use
c) Beavercreek Construction
d) Restaurant
e) Swimming Pool Sales
f) Dog Kennel
g) Sausage Business
h) Convenience Store

━━ Phase 3B Acquisition Boundary ━━ Site Vicinity Study Area Boundary

Key Map: **LF-9 Central**

Lot 18 and Part of Lot 17; Concession III; Township of West Lincoln; formerly in the Township of Gainsborough

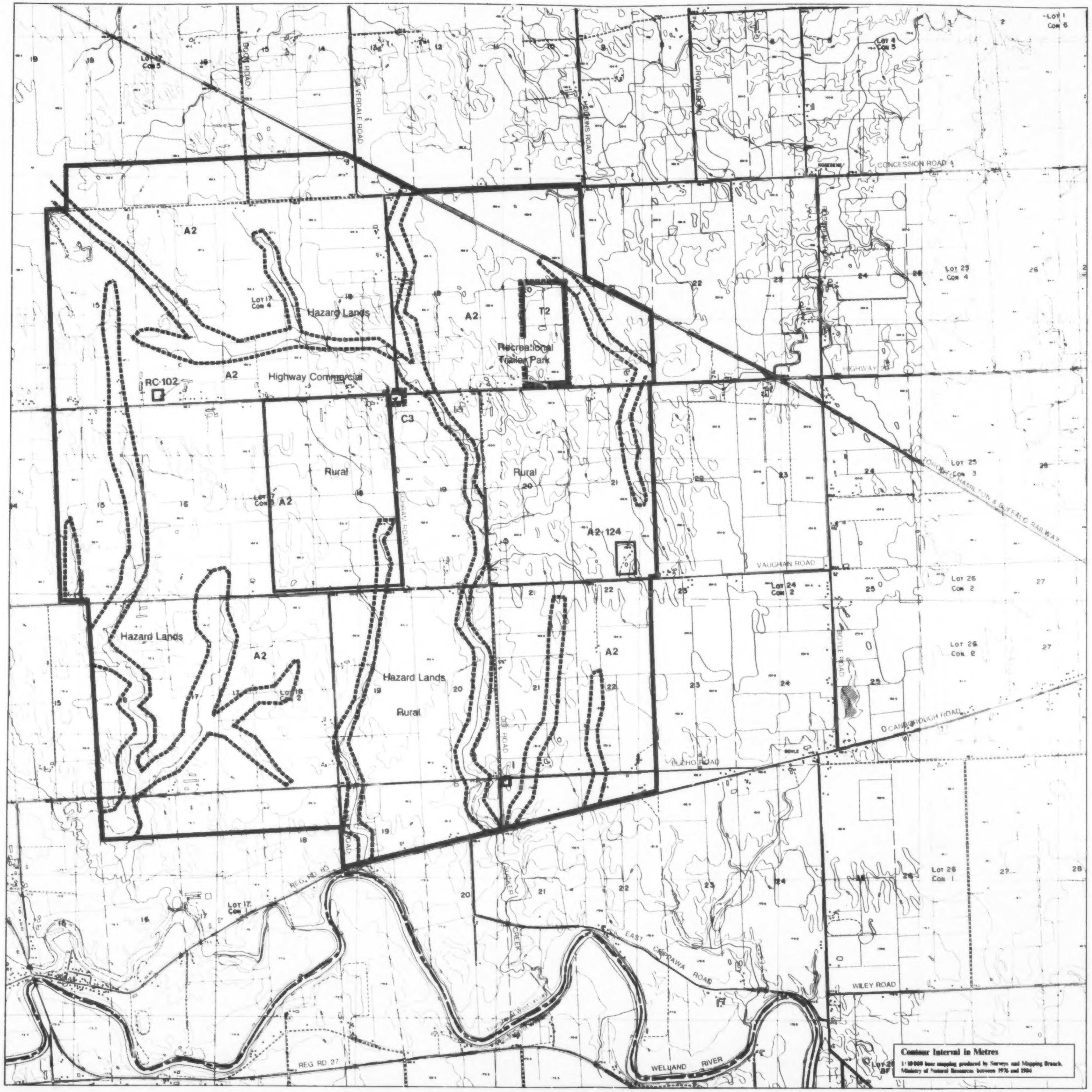

Brampton
TORONTO
Mississauga
Milton
Oakville
LAKE ONTARIO
Burlington
HAMILTON
St Catharines
Brantford
Grimsby
Niagara Falls
Caledonia
Dunnville
Port Colborne
LAKE ERIE

See Report Appendix for Sources

1000 feet 0 1000
500 metres 0 500

Existing Land Use and Land Ownership

November 1985 **Figure 3.11**



Lot 17 Con 5
Lot 17 Con 4
Lot 17 Con 3
Lot 18 Con 2
Lot 17 Con 1
Lot 24 Con 2
Lot 25 Con 4
Lot 25 Con 3
Lot 26 Con 2
Lot 26 Con 1
Lot 1 Con 6
Lot 6 Con 5
CONCESSION ROAD 4
HIGHWAY
TORONTO HAMILTON & BUFFALO RAILWAY
VAUGHAN ROAD
CANBOROUGH ROAD
BOYLE ROAD
WILEY ROAD
EAST CHIPPAWA ROAD
WELLAND RIVER
REG RD 27
REG RD 45
A2
Hazard Lands
Highway Commercial
RC-102
C3
T2
Recreational Trailer Park
Rural
A2-124

Contour Interval in Metres

1:10 000 base mapping produced by Surveys and Mapping Branch, Ministry of Natural Resources between 1976 and 1984

Ontario Waste Management Corporation

Consultant:

LEON KENTRIDGE ASSOCIATES LTD

Marshall Macklin Monaghan Limited

Legend:

Area Municipality Official Plan

- Rural
- Hazard Lands
- Highway Commercial
- Recreational Trailer Park

Zoning By-Law

A2	Agricultural
RC	Rural Commercial
C3	Highway Commercial
T2	Trailer Camp
I	Institutional

Notes

A2-124 Sale of swimming pools

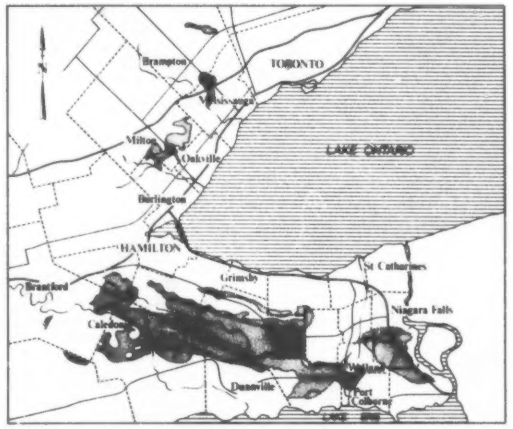
RC-102 Variety store and gas station

Phase 3B Acquisition Boundary

Site Vicinity Study Area Boundary

Key Map: **LF-9 Central**

Lot 18 and Part of Lot 17; Concession III; Township of West Lincoln; formerly in the Township of Gainsborough



Brampton
TORONTO
Mississauga
Milton
Oakville
LAKE ONTARIO
Burlington
HAMILTON
Brantford
Grimsby
St Catharines
Niagara Falls
Caledonia
Dunnville
Port Colborne

See Report Appendix for Sources

1000 feet 0 1000
500 metres 0 500

Planning Status

November 1985

Figure 3.12

LF-9C

Site Location

LF-9C is a 135 ha site located in the central part of the Township of West Lincoln. It is bounded on the north by Bismarck Road (Highway No. 20), the east by Schram Road and the south by Vaughan Road.

LF-9C has been identified as a potential integrated site for all facilities.

Existing Land Use

The existing use of the site is agricultural. There are 6 residences on site.

The site vicinity of LF-9C is agricultural but has approximately 75 residences and 7 commercial uses, including restaurants, junk yards, dog kennels and a few home-businesses.

The community and regional area is also agricultural, rural or vacant but includes the rural settlements of Wellandport, Bismarck, Silverdale and Boyle.

Planned and Proposed Land Use

The site is zoned almost entirely Agricultural. LF-9C is designated for Rural uses in the Township of West Lincoln Official Plan.

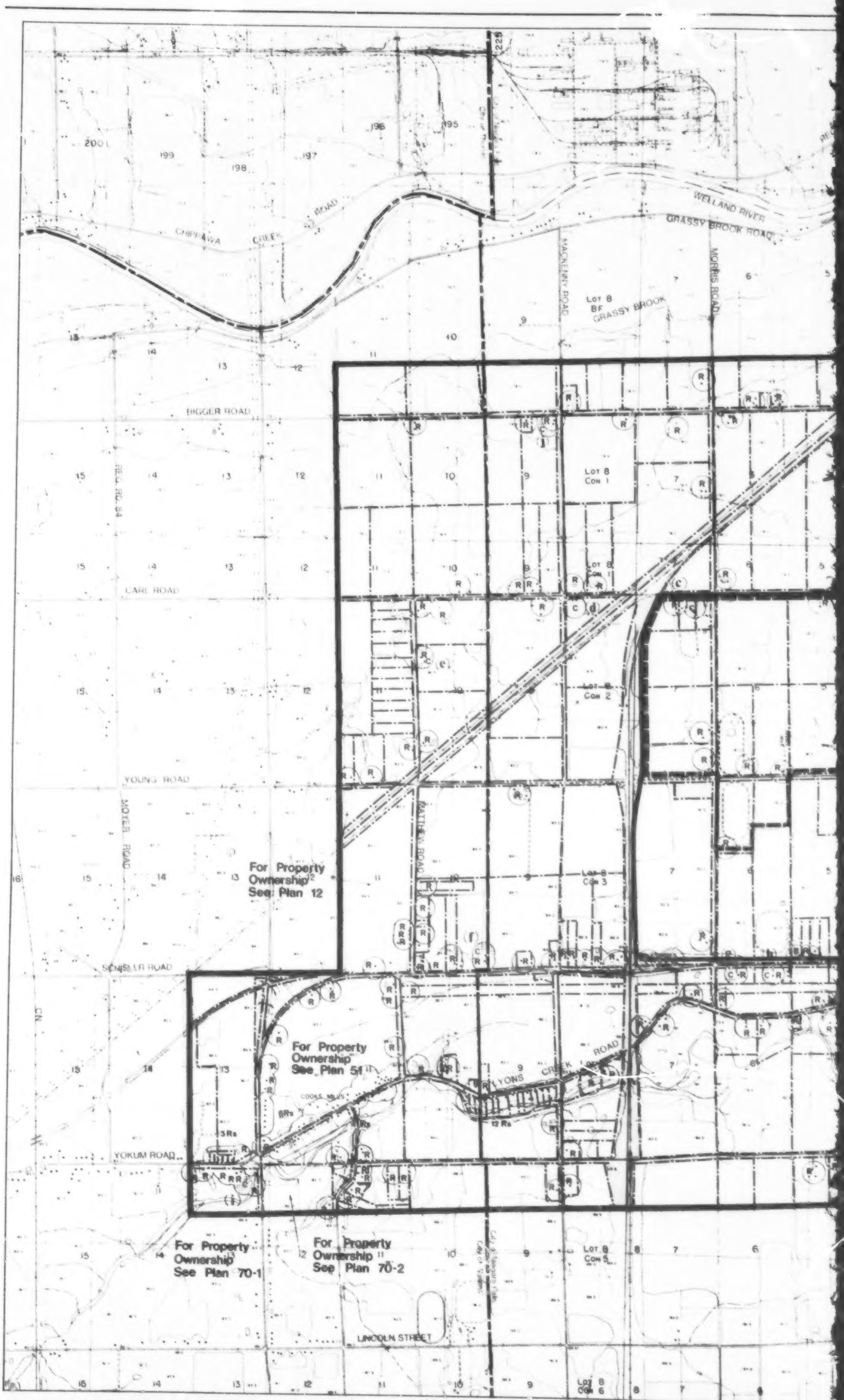
The site vicinity is designated Agricultural with minor exceptions for minor Commercial uses and for a Recreational Trailer Park (unbuilt). The community and region area is similarly designated except for the Hamlet designations for Wellandport, Bismarck, Silverdale and Boyne.

Land Use Stability

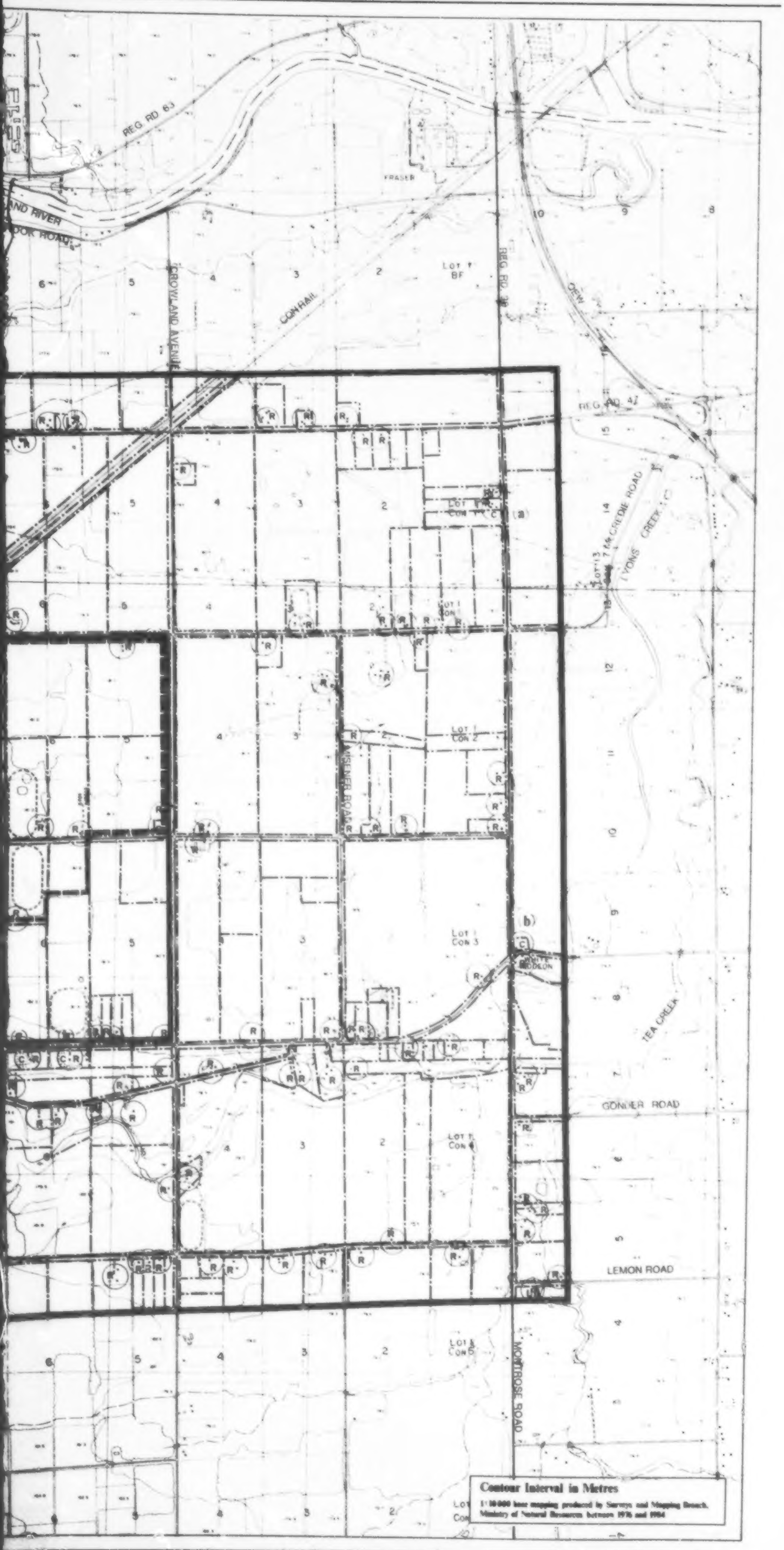
Absentee ownership of the site affects one-quarter of the properties but one-half of the total area of the site. Farmland sales values in the West Lincoln area have climbed steadily in the 1980-1983 period, an increase of 28%.

Provincial Policies and Plans

The site is unaffected by either the Niagara Escarpment or Parkway Belt West Plans.



WELLAND RIVER
GRASSY BROOK ROAD
CHIPPAWA CREEK ROAD
MACKENNY ROAD
MORRIS ROAD
Lot 8 BF
GRASSY BROOK
BIGGER ROAD
REG. RD. 84
Lot 8 Con 1
CARL ROAD
Lot 8 Con 2
YOUNG ROAD
MOYER ROAD
Lot 8 Con 3
For Property Ownership See Plan 12
SCHISLER ROAD
For Property Ownership See Plan 51
LYONS CREEK ROAD
COOKS MILLS
12 Rs
8Rs
3 Rs
YOKUM ROAD
CN
For Property Ownership See Plan 70-1
For Property Ownership See Plan 70-2
Lot 8 Con 5
LINCOLN STREET
Lot 8 Con 6


REG RD 63
FRASER
AND RIVER
OOK ROAD
CROWLAND AVENUE
CONRAIL
REG RD 98
QEW
REG RD 47
LOT 1 BF
LOT 1 CON 1
LOT 1 CON 2
LOT 1 CON 3
LOT 1 CON 4
LOT 1 CON 5
LOT 13 1/4 CREDIE ROAD
LYONS CREEK
TEA CREEK
WISENER ROAD
GONDER ROAD
LEMON ROAD
MONTROSE ROAD
R
C
(a)
(b)

Contour Interval in Metres

1:10 000 base mapping produced by Surveys and Mapping Branch, Ministry of Natural Resources between 1976 and 1984

OWMC Ontario Waste Management Corporation

Consultant:

LEON KENTRIDGE ASSOCIATES LTD.

Marshall Macklin Monaghan Limited

Legend:

Existing Land Use

- (R) **Residential**
- (C) **Commercial**
- (I) **Industrial**

Land Ownership

- -·-·- **Property Boundary**
- ☐ **Publicly Held Land**

Notes

(a) Canine Education Centre
(b) Used Car Lot
(c) Frontier Auto Dismantlers
(d) Master Paving Co.
(e) Metal Salvage Business
(f) Sandblasting Business
(g) Savoie's Auto Repair
(h) Rabbitry
(i) Automotive Service Station
(j) Biggar Auto Body

Proposed Boundary for Partially Integrated Siting Option

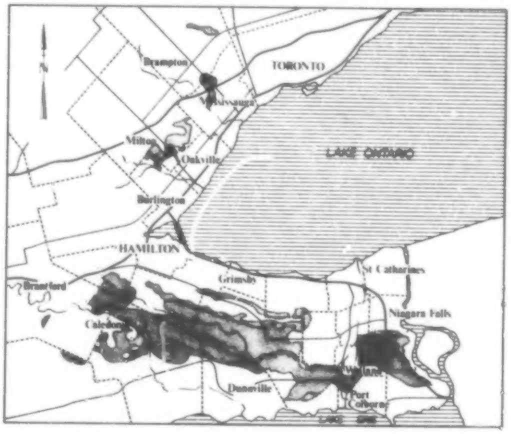
Proposed Boundary for Integrated Siting Option (Phase 3B Acquisition Boundary)

Site Vicinity Study Area Boundary

Key Map:

LF-1 East

Lots 5, 6 and 7: Concessions II and III; City of Niagara Falls; formerly in the Township of Crowland


N
Brampton
TORONTO
Mississauga
Milton
Oakville
LAKE ONTARIO
Burlington
HAMILTON
Grimsby
St Catharines
Brantford
Caledonia
Niagara Falls
Welland
Dunnville
Port Colborne

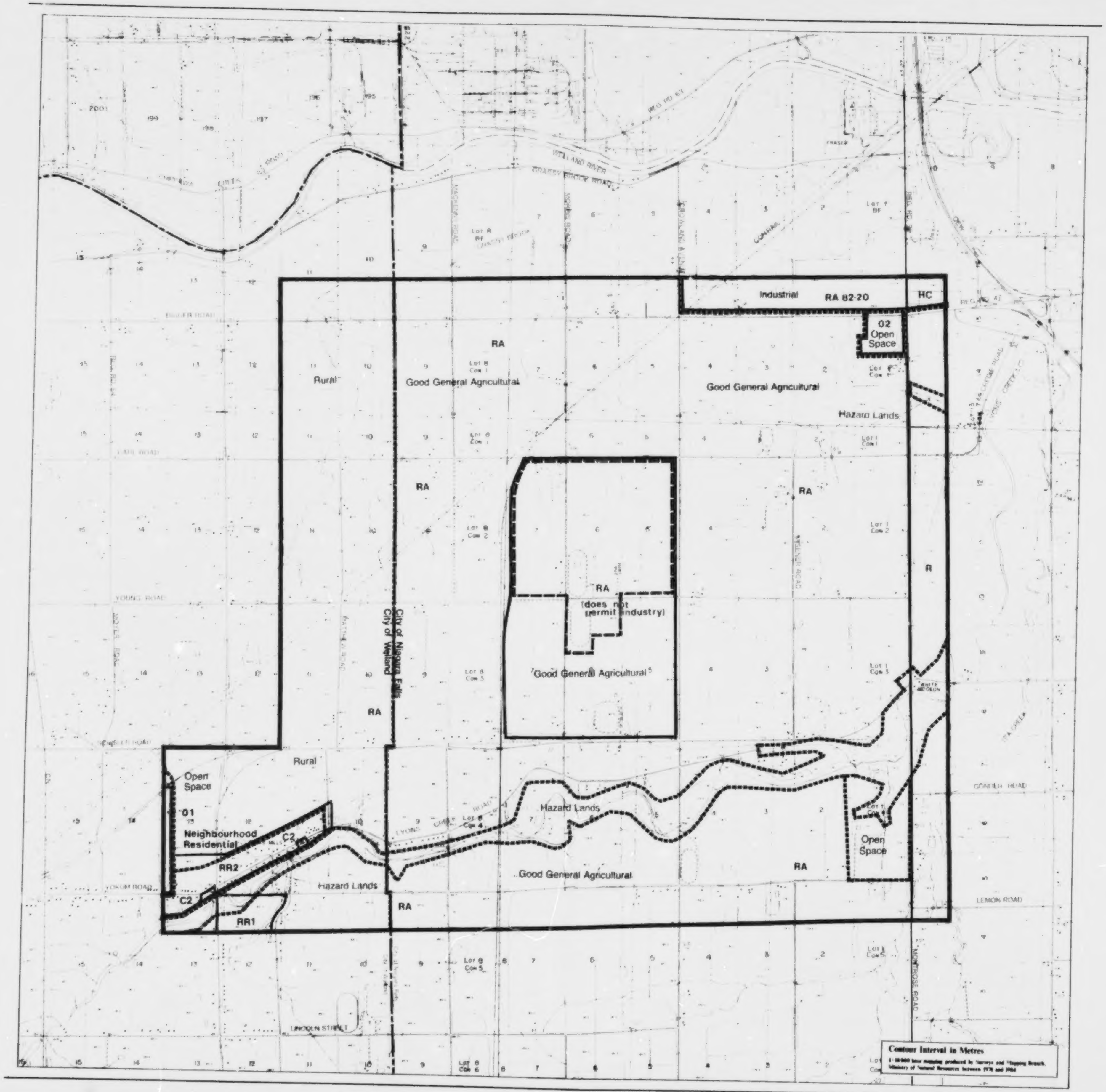
See Report Appendix for Sources

1000 feet 0 1000
500 metres 0 500

Existing Land Use and Land Ownership

November 1985

Figure 3.13


Welland River
Grassy Brook Road
Industrial
RA 82-20
HC
02
Open
Space
RA
Rural
Good General Agricultural
Hazard Lands
R
(does not permit industry)
City of Niagara Falls
City of Welland
Open Space
01
Neighbourhood Residential
C2
RR2
RR1
Lyons Creek Road
Lemon Road
Lincoln Street
Montrose Road
Young Road
Yokom Road
Lot 8 Con 1
Lot 8 Con 2
Lot 8 Con 3
Lot 8 Con 4
Lot 8 Con 5
Lot 8 Con 6

Contour Interval in Metres
1:10 000 base mapping produced by Surveys and Mapping Branch, Ministry of Natural Resources between 1978 and 1984

OWMC Ontario Waste Management Corporation

Consultant:

LEON KENTRIDGE ASSOCIATES LTD.

Marshall Macklin Monaghan Limited

Legend:

Area Municipality Official Plan

▬▬	Good General-Agricultural	▬▬	Industrial
▬▬	Rural	▬▬	Open Space
▬▬	Hazard Lands	▬▬	Neighbourhood Residential

Zoning By-Law

RA	Rural	HC	Highway Commercial
01	Open Space 1	RR1	Rural Residential 1
02	Open Space 2	RR2	Rural Residential 2
		C2	Shopping District
		R	Rural

Notes:

RA 82 20 Permits Industry

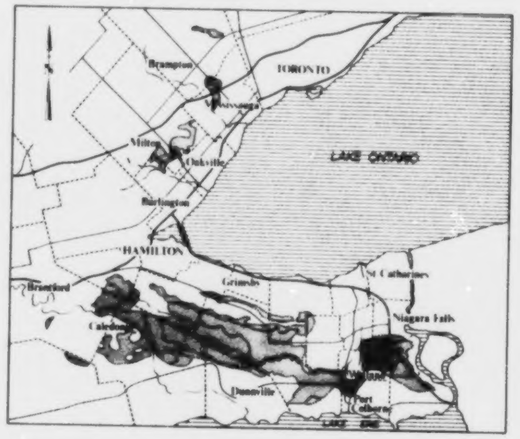
▬ ▬ Proposed Boundary for Partially Integrated Siting Option

▬▬ Proposed Boundary for Integrated Siting Option (Phase 3B Acquisition Boundary)

▬▬ Site Vicinity Study Area Boundary

Key Map: **LF-1 East**

Lots 5, 6 and 7; Concessions II and III; City of Niagara Falls; formerly in the Township of Crowland


N
Brampton
TORONTO
Mississauga
Milton
Oakville
LAKE ONTARIO
Burlington
HAMILTON
St Catharines
Brantford
Grimsby
Niagara Falls
Caledonia
Dunnville
Welland
Port Colborne
LAKE ERIE

See Report Appendix for Sources

1000 feet 0 1000
500 metres 0 500

Planning Status

November 1985 Figure 3.14

LF-1E

Site Location

LF-1E, prior to the refinement of site boundaries, was a 273 ha site located south of the Welland River in the City of Niagara Falls. It is bounded on the north by Carl Road, the east by Crowland Road, the south by Schisler Road and the west by the Conrail line.

LF-1E has been identified as a possible landfill only site, as a physical/chemical treatment plant site, or as an integrated site for all facilities.

Existing Land Use

The existing use of the site is predominantly rural residential or vacant, except for a single commercial use and an auto wrecking yard (see Table C.4 in Appendix C). There are 16 residences on site.

The site vicinity of LF-1E is predominantly rural but has over 200 residences and 9 commercial uses. Several businesses are automobile related, including used car sales, wrecking and service stations, as well as home-businesses such as paving and sandblasting companies. The site vicinity includes part of the rural settlement of Cook's Mills.

The community and regional area is largely rural or vacant but includes the remaining part of Cook's Mills and industrial uses either side of the Welland River.

Proposed and Planned Land Use

Site zoning is entirely Agricultural. LF-1E is designated for Good-General Agricultural uses in the draft City of Niagara Official Plan and in the Niagara Region Official Plan.

Over one-half of the site vicinity is designated Good-General Agricultural and one-quarter is designated Rural, a category used for lands of lesser agricultural capability in Niagara Falls. The Rural designation in the City of Welland Official Plan contains policies that are protective of prime agricultural lands. The site vicinity includes part of the Residential Neighbourhood designation for Cook's Mills in the City of Welland Official Plan.

There are 6 vacant lots of record on the site and 140 in the site vicinity, many of which are in the Cook's Mills area.

The community and regional area is generally similar in use to the site vicinity, but also includes Industrial designations on either side of the Welland River and small amounts of Resort and Highway Commerical designations east of the Q.E.W. (City of Niagara Falls Official Plan).

Land Use Stability

Absentee ownership of the site is relatively low.

Provincial Policies and Plans

The site is unaffected by either the Niagara Escarpment or Parkway Belt West Plans.

P1-27E

Site Location

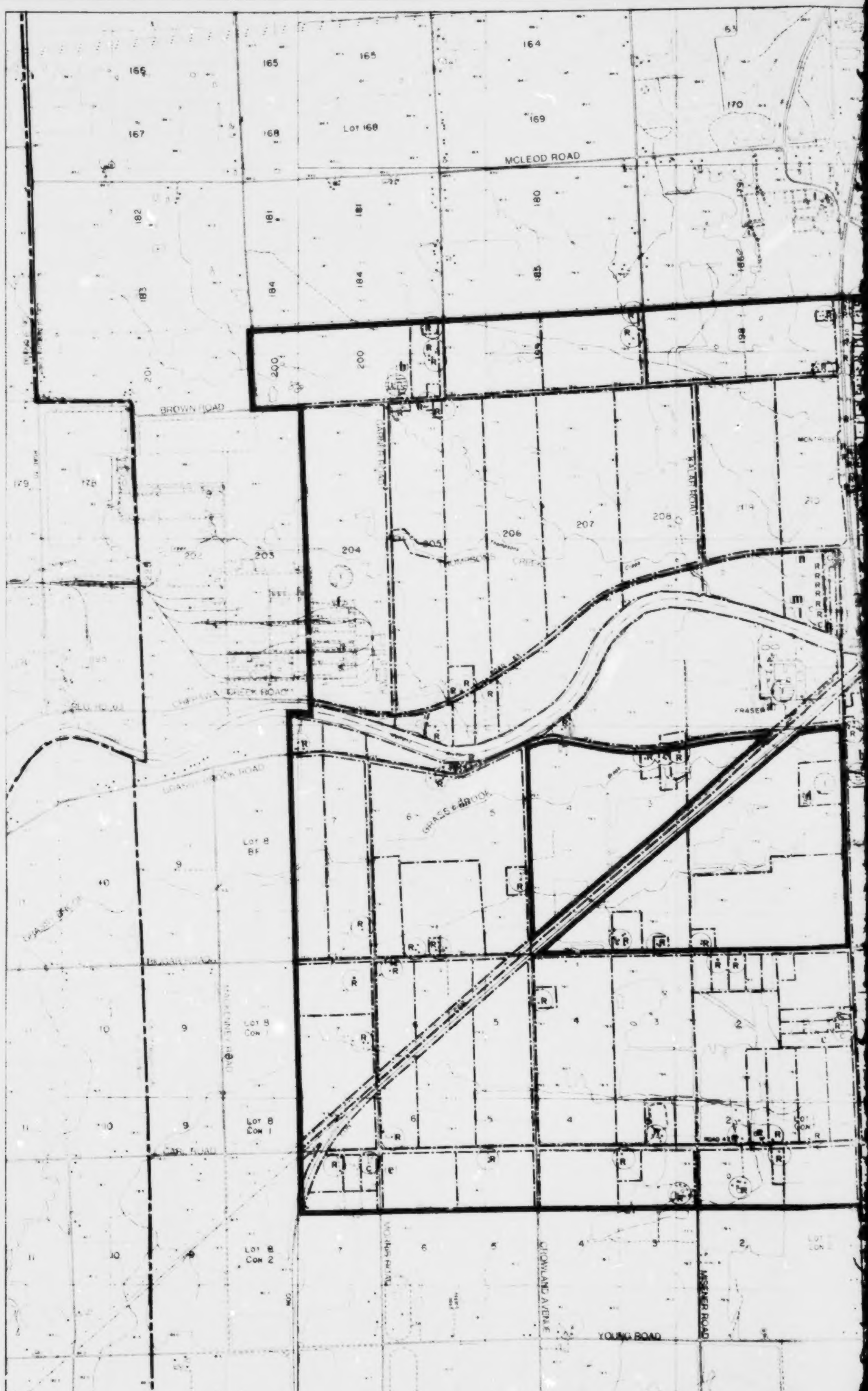
P1-27E is a 188 ha site located in the City of Niagara Falls south of the Welland River. It is bounded on the north by Grassy Brook Road, the east by Montrose Road, the south by Biggar Road and the west by Crowland Avenue.

P1-27E has been identified as a potential site for a physical/chemical treatment plant and incinerator.

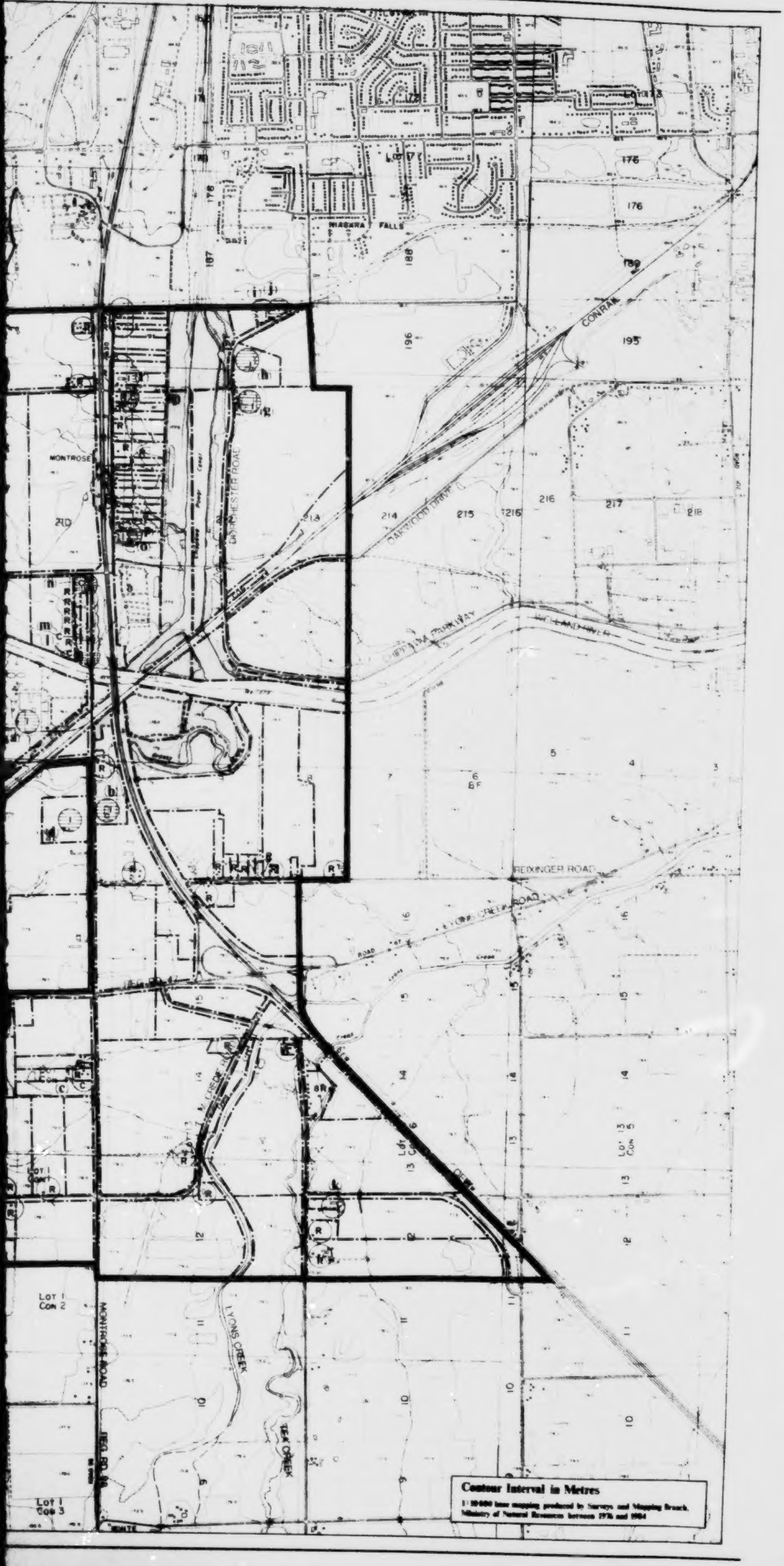
Existing Land Use

The existing use of the site is primarily agricultural or vacant. There are 6 residences and one industrial building, a warehouse of about 28 000 m^2. The site is traversed by a ConRail railway line.

The site vicinity of P1-27E is predominantly a rural agricultural area with major heavy industrial uses to the north and west, including the Ford Glass Plant and the Cyanimid complex. There are approximately 90 residences, 6 commercial uses and 11 industrial facilities. The commercial uses include



165
165
165
164
167
168
Lot 168
169
170
MCLEOD ROAD
182
181
181
180
183
184
184
185
200
200
BROWN ROAD
179
178
202
203
204
205
206
207
208
CREEK
CHIPPAWA CREEK ROAD
FRASER
GRASSY BROOK ROAD
GRASSY BROOK
Lot 8 BF
10
9
7
6
5
4
3
Lot 8 Con 1
5
4
3
2
Lot 8 Con 1
6
5
4
Lot 8 Con 2
7
6
5
4
3
2
YOUNG ROAD
MISENER ROAD
Lot 8
7
6
5
4
3
2
R


NIAGARA FALLS
CONRAIL
MONTROSE
DORCHESTER ROAD
OAKWOOD DRIVE
CHIPPAWA PARKWAY
WELLAND RIVER
REIXINGER ROAD
LYONS CREEK ROAD
LYONS CREEK
MONTROSE ROAD
LOT 1 CON 1
LOT 1 CON 2
LOT 1 CON 3
LOT 13 CON 5
176
178
187
188
189
195
196
214
215
216
217
218
5
6 BF
4
3
16
15
14
13
12
11
10

Contour Interval in Metres

1:10 000 base mapping produced by Surveys and Mapping Branch, Ministry of Natural Resources between 1976 and 1984

OWMC Ontario Waste Management Corporation

Consultant:

LEON KENTRIDGE ASSOCIATES LTD

Marshall Macklin Monaghan Limited

Legend:

Existing Land Use

Ⓡ	Residential
Ⓒ	Commercial
Ⓘ	Industrial

Land Ownership

—·—	Property Boundary
☐	Publicly Held Lands

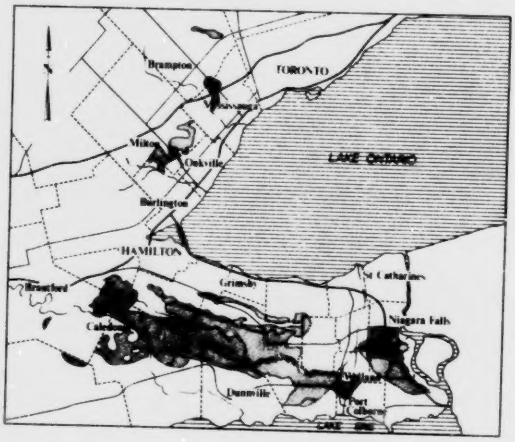
Notes

a	Ford Glass Plant	j	Requip Plant
b	Trucking Terminals	k	Queensway Auto Parts
c	Canine Education Centre	l	Aluminum Business
d	10220 sq. m. Industrial Building	m	Scrap Yard Business
e	Frontier Auto Dismantlers	n	San Montrose Hotel/Restaurant
f	Cyanamid Plant	o	Modern Exposaic Plant
g	Chemacryl Plant	p	Topsoil & Manure Business
h	Panelera Plant	q	Topsoil Business
i	UPSL Industrial Plant	r	Masterwood Doors Plant

—	Phase 3B Acquisition Boundary
━	Site Vicinity Study Area Boundary

Key Map: **PI-27 East**

Part of Lots 1, 2, 3, and 4; Broken Front Concession Welland River; City of Niagara Falls; formerly in the Township of Crowland


N
Brampton
TORONTO
Mississauga
Milton
Oakville
LAKE ONTARIO
Burlington
HAMILTON
Brantford
Grimsby
St Catharines
Caledonia
Niagara Falls
Welland
Dunnville
Port Colborne
LAKE ERIE

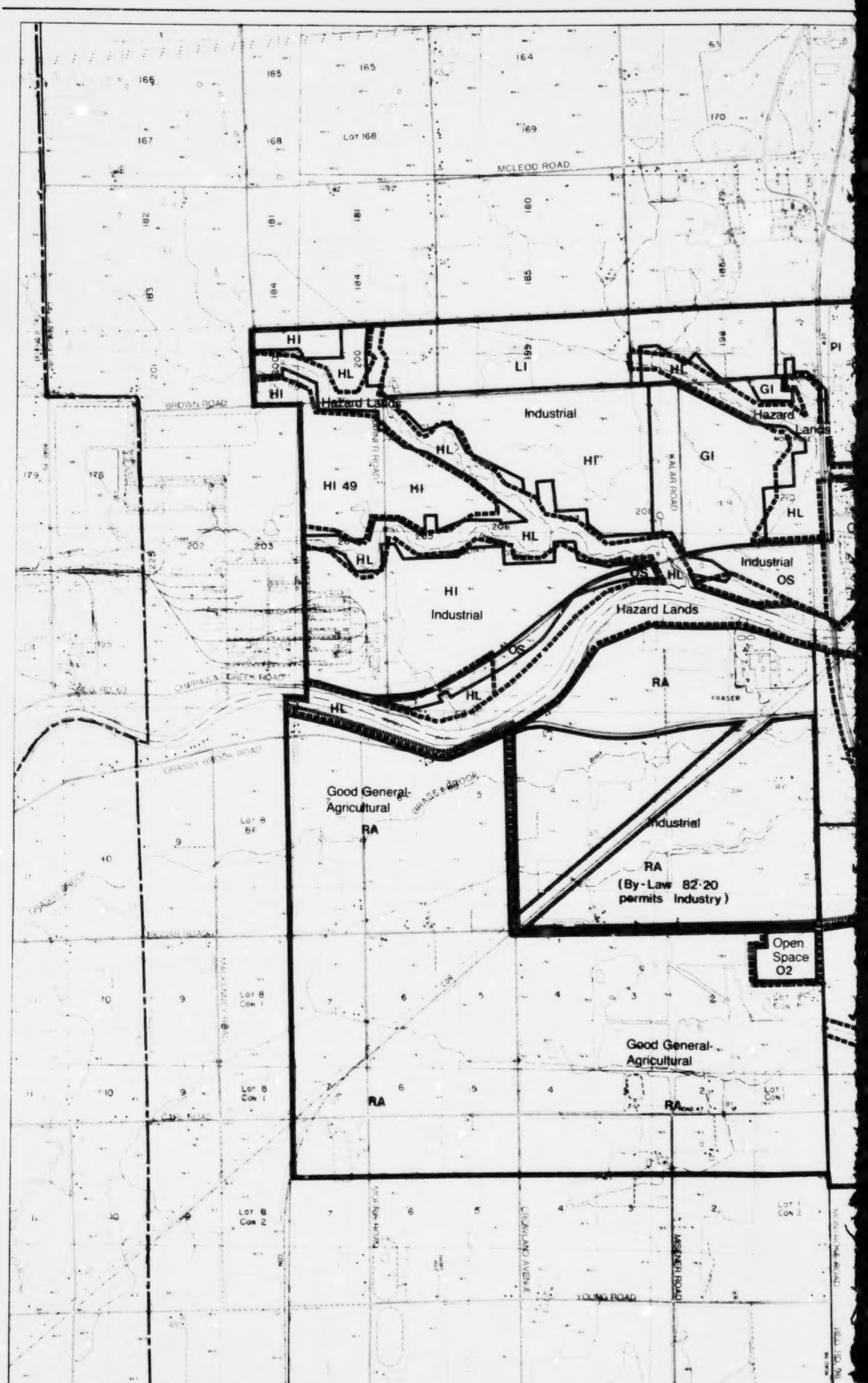
See Report Appendix for Sources

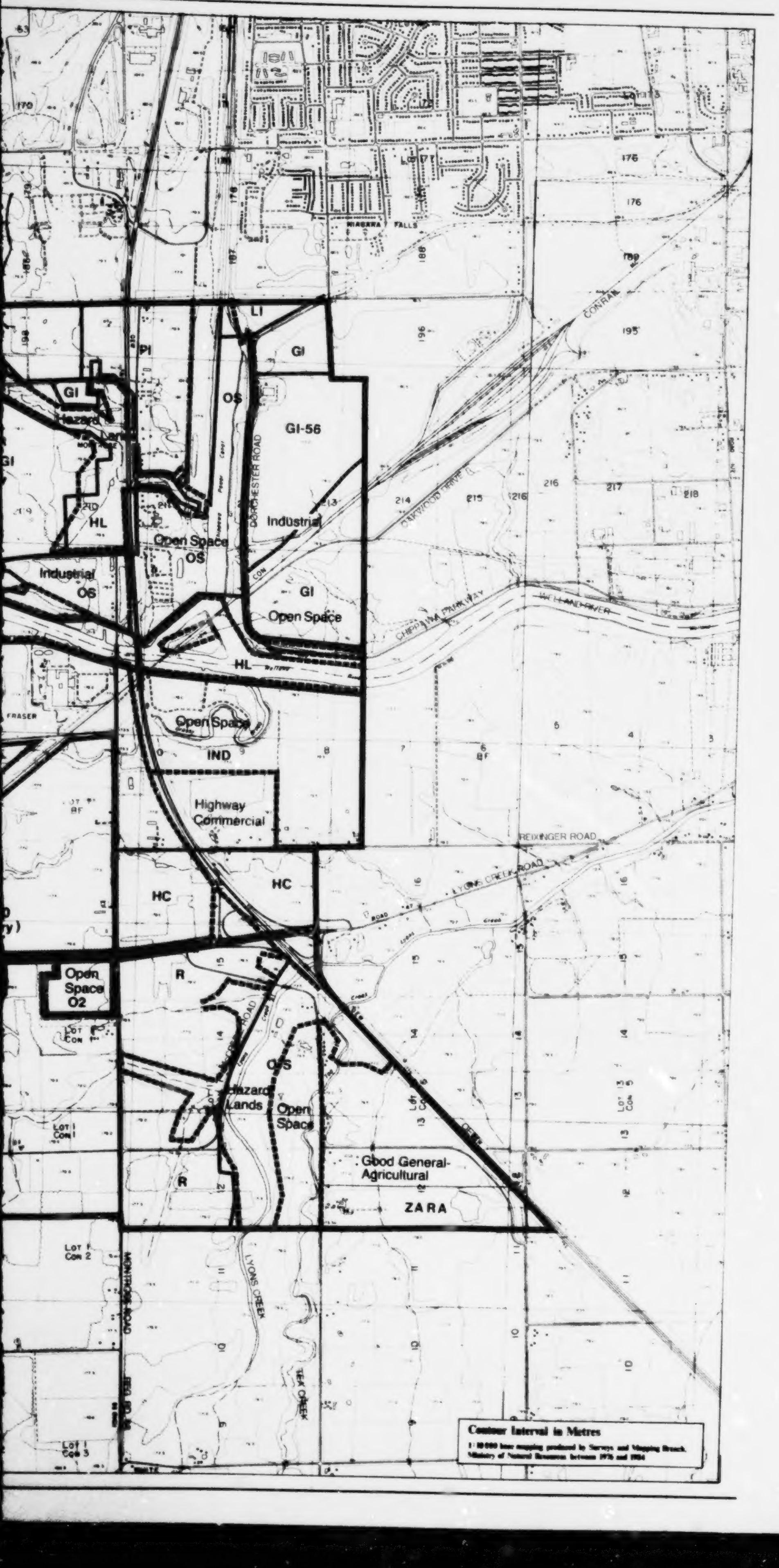
1000 feet 0 1000
500 metres 0 500

Existing Land Use and Land Ownership

November 1985

Figure 3.15


MCLEOD ROAD
BROWN ROAD
CHIPPAWA CREEK ROAD
GRASSY BROOK ROAD
GRASSY BROOK
KALAR ROAD
YOUNG ROAD
CROWLAND AVENUE
LYONS CREEK ROAD
FRASER
HI
HL
LI
PI
GI
Hazard Lands
Industrial
HI 49
OS
RA
Good General-Agricultural
(By-Law 82-20 permits Industry)
Open Space O2
LOT 168
Lot 8 BF
Lot 8 Con 1
Lot 8 Con 2
Lot 1 Con 1
Lot 8



GI
Hazard Lands
HL
Industrial
OS
PI
LI
GI
GI-56
DORCHESTER ROAD
Industrial
Open Space
OS
GI
Open Space
HL
CHIPPAWA PARKWAY
WELLAND RIVER
OAKWOOD DRIVE
CONRAIL
FRASER
Open Space
IND
Highway Commercial
HC
HC
REIXINGER ROAD
LYONS CREEK ROAD
Open Space O2
R
OS
Hazard Lands
Open Space
Good General-Agricultural
R
ZARA
MONTROSE ROAD
LYONS CREEK
TEE CREEK
LOT 1 CON 1
LOT 1 CON 2
LOT 1 CON 3
NIAGARA FALLS
Contour Interval in Metres

OWMC **Ontario Waste Management Corporation**

Consultant:
LEON KENTRIDGE ASSOCIATES LTD.
Marshall Macklin Monaghan Limited

Legend:

Area Municipality Official Plan

- Good General-Agricultural
- Hazard Lands
- Open Space
- Industrial
- Highway Commercial

Zoning By-Law

PI	Prestige Industrial
LI	Light Industrial
GI	General Industrial
HI	Heavy Industrial
IND	Industrial
R	Rural
RA	Rural Agricultural
GC	General Commercial
HC	Highway Commercial
HL	Hazard Lands
OS	OpenSpace
O2	Public & Private Open Space

Development Application

ZARA Zoning Amendment • Residential • Approved

Regional Urban Area Boundary

Notes

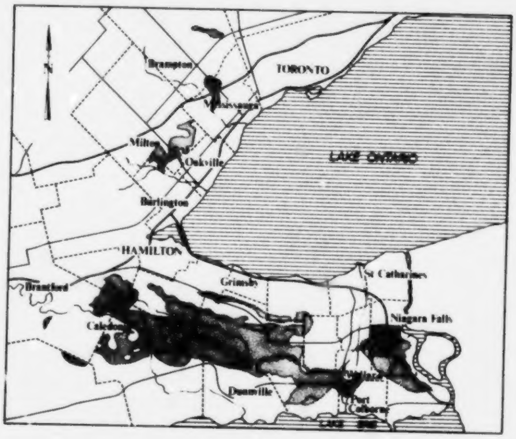
HI-49	See By-Law 79-200 as amended, section 19-1-49
RA-82-20	Permits Industry
GI-56	See By-Law 79-200 as amended, section 19-1-56

Phase 3B Acquisition Boundary

Site Vicinity Study Area Boundary

Key Map: **PI-27 East**

Part of Lots 1, 2, 3, and 4; Broken Front Concession Welland River; City of Niagara Falls; formerly in the Township of Crowland



N
Brampton
TORONTO
Mississauga
Milton
Oakville
LAKE ONTARIO
Burlington
HAMILTON
Brantford
Grimsby
St Catharines
Caledonia
Niagara Falls
Dunnville
Welland
Port Colborne
LAKE ERIE

See Report Appendix for Sources

1000 feet 0 1000
500 metres 0 500

Planning Status

November 1985 **Figure 3.16**

automobile parts and wrecking businesses, some home businesses and a restaurant. The industrial uses vary in size and intensity, ranging from small manufacturers to warehouses to large heavy industrial complexes. The site vicinity is bisected by the Welland River and is bounded by the Q.E.W.

The community and regional area is largely rural but includes industrial uses to the north, northwest and northeast, and urban residential development to the north in the City of Niagara Falls.

Proposed and Planned Land Use

The site is zoned entirely Agricultural in the Zoning By-law of the City of Niagara Falls, but with a provision which permits industrial uses. P1-27E is designated for Industrial uses in the draft City of Niagara Official Plan and is within the Urban Area designation for the City in the Niagara Region Official Plan.

There are 4 vacant lots of record on the site, and 28 in the site vicinity.

The site vicinity has a large portion of Good-General Agricultural designations in addition to substantial Industrial and Rural designations. Open Space and Highway Commercial designations comprise the remainder of the lands.

The 5 km community and regional area also includes parts of two residential districts within the southern section of the City of Niagara Falls, with a combined population capacity of over 10 000 persons.

Land Use Stability

Absentee ownership of the site is relatively low.

Provincial Policies and Plans

The site is unaffected by either the Niagara Escarpment or Parkway Belt West Plans.

DESCRIPTION OF SITING OPTIONS

With the eight candidate sites, siting options utilized either one or two sites in combination. Those sites which can accommodate all the required waste management facilities (that is, the physical/chemical treatment plant, the incinerator and the engineered landfill) on a single site are called integrated siting options. There are three such fully integrated siting options:

- LF-3C
- LF-9C
- LF-1E

Partially integrated siting options consist of two candidate sites. There are 3 partially integrated siting combinations:

- LF-4N/PI-1N
- LF-4N/PI-13N
- LF-1E/PI-27E

Each of the three siting combinations has 2 potential options for the location of the physical/chemical treatment plant. One option places the physical/chemical treatment plant with the incinerator (engineered landfill separate), the second placing the physical/chemical plant with the landfill. Thus, the total number of siting options subjected to the refinement of siting options was 9, including 3 fully integrated and 6 partially integrated siting options. These were further reduced to 6 siting options for the comparison of siting options following the choice of locations for the physical/chemical treatment plant for partially integrated siting options.

4. REFINEMENT OF SITE BOUNDARIES

INTRODUCTION

The purpose of the refinement of site boundaries stage of the site evaluation process was to refine the boundaries of the candidate sites that exceeded the area required to accommodate the proposed facilities. This would enable the candidate sites to be evaluated and compared based on approximately equal site areas.

The need for refinement of site boundaries was applicable to only three (3) of the candidate sites:

- PI-1N
- LF-3C
- LF-1E

In order to perform the boundary refinement exercise, the Site Selection Team determined that a methodology utilizing constraint mapping would be most appropriate. The process of constraint mapping involves each consultant identifying the major constraining factors or features from the perspective of the various disciplines. From a land use viewpoint, such constraints could include numbers of residences and commercial/industrial facilities within specified impact zones, existing land use patterns, and land use designations in the vicinity of the site. The Site Selection Team modified the Phase 3B candidate sites on the basis of consideration of the various constraints identified by all consultants.

In addition, in order to facilitate comparisons using factors that include the number of features for a particular area (eg. number of residences), some sites were subdivided into parcels for the purpose of comparison by the land use consultant.

IDENTIFICATION OF FACTORS AND INDICATORS

To select the factors and indicators to be utilized in the constraint mapping exercise, the land use consultant initially considered the entire list of land use factors and indicators prepared for the overall Phase 4A site selection analysis. Several of these were dropped from consideration. The factors Land Use Stability and Provincial Policies and Plans were not used in this analysis because they do not reveal any differences between alternative site boundaries.

The factors deemed to be useful in this analysis were Existing Land Use and Proposed and Planned Land Use. Specifically, the key constraints from a land use perspective were residential, commercial and industrial uses on-site and immediately adjacent to it, the general land use pattern near the site, and the land use designations surrounding the site. The critical study areas were the site itself and the lands in the immediate proximity to a distance of 1 000 metres from the site/parcel boundary.

The 1 000 m study area was selected by the land use consultant as this is the area where the greatest potential impact from the facility is expected to occur. Also, this is the area in which the most significant differences in impacts between alternative site boundaries will occur.

Consideration was, however, given to key land use constraints such as residential designations or clusters, or compatible industrial designations within the site vicinity but beyond the 1 000 metre study area boundary if such constraints or compatible uses permitted differentiation in impacts to the parcel options being considered.

Upon review of the collected data, certain factors and indicators were screened from the analysis because there were no occurrences of these indicators, of if no differentiation could be made on the basis of this data. The factor Planned and Proposed Land Use, including the indicator land use designations, was screened on the basis of the latter consideration (no difference between options).

For the Existing Land Use factor, two specific indicators were screened. These were:

- industrial facilities (site and site vicinity) - none on-site, no difference between options in site vicinity
- land use pattern (site) - no difference between options

Land use pattern in the site vicinity study area was retained in the analysis. The following Table 4.1 identifies and ranks the indicators for the factor Existing Land Use which were utilized by the land use consultant in the site boundary refinement process. A rationale for the ranking is provided. The site vicinity study area refers to the 1 000 m study area as defined by the land use consultant, except in the case of the land use pattern indicator.

TABLE 4.1
PHASE 4A - REFINEMENT OF SITE BOUNDARIES
RANKING OF FACTORS AND INDICATORS

Factor	Indicator/Constraint	Rank	Rationale
Existing Land Use	. number of residences - site vicinity	1	. most specific indication of impacts to most sensitive land use (residential) in highest impact area
	. number of residences - site	2	. very specific indication of displacement of most sensitive land use (residential) - will be compensatible

TABLE 4.1
(Continued)
PHASE 4A - REFINEMENT OF SITE BOUNDARIES
RANKING OF FACTORS AND INDICATORS

Factor	Indicator/Constraint	Rank	Rationale
	. commercial facilities - site vicinity	3	. less frequency and sensitivity to impacts than residential uses
	. commercial facilities - site	4	. limited frequency and sensitivity to impacts - may be relocated/compensated
	. land use pattern - site vicinity	5	. generally the same for all parcel options except LF-1E - not mitigatible

These indicators were utilized in the constraint mapping process as described for each of the three sites requiring boundary refinement in the following sections. The three study areas enabled the consultant to identify on-site displacement of uses, land use constraints in the immediate vicinity of the alternative site boundaries, and any major constraints lying beyond the immediate vicinity of the alternative site boundaries.

DATA COLLECTION AND ANALYSIS

The following describes the findings and results of the analysis of site boundary refinements as related to the three candidate sites under consideration.

PI-1N

The Site Selection Team identified a major airport navigation constraint with the western half of PI-1N. See M.M. Dillon Transportation report. The east half of the site remained for consideration. Of this half, either the north or south portions were suitable for facilities development.

In order to facilitate comparisons using factors such as number of residences, which are not easily adapted to constraint mapping, the east half of the site was divided into two parcels to be compared. (See Figure 4.1)

The land use consultant mapped the constraints in accordance with the identified indicators and compiled the data in Table D.1 in Appendix D. It is evident from the data that there was very little difference between these parcels in terms of land use constraints.

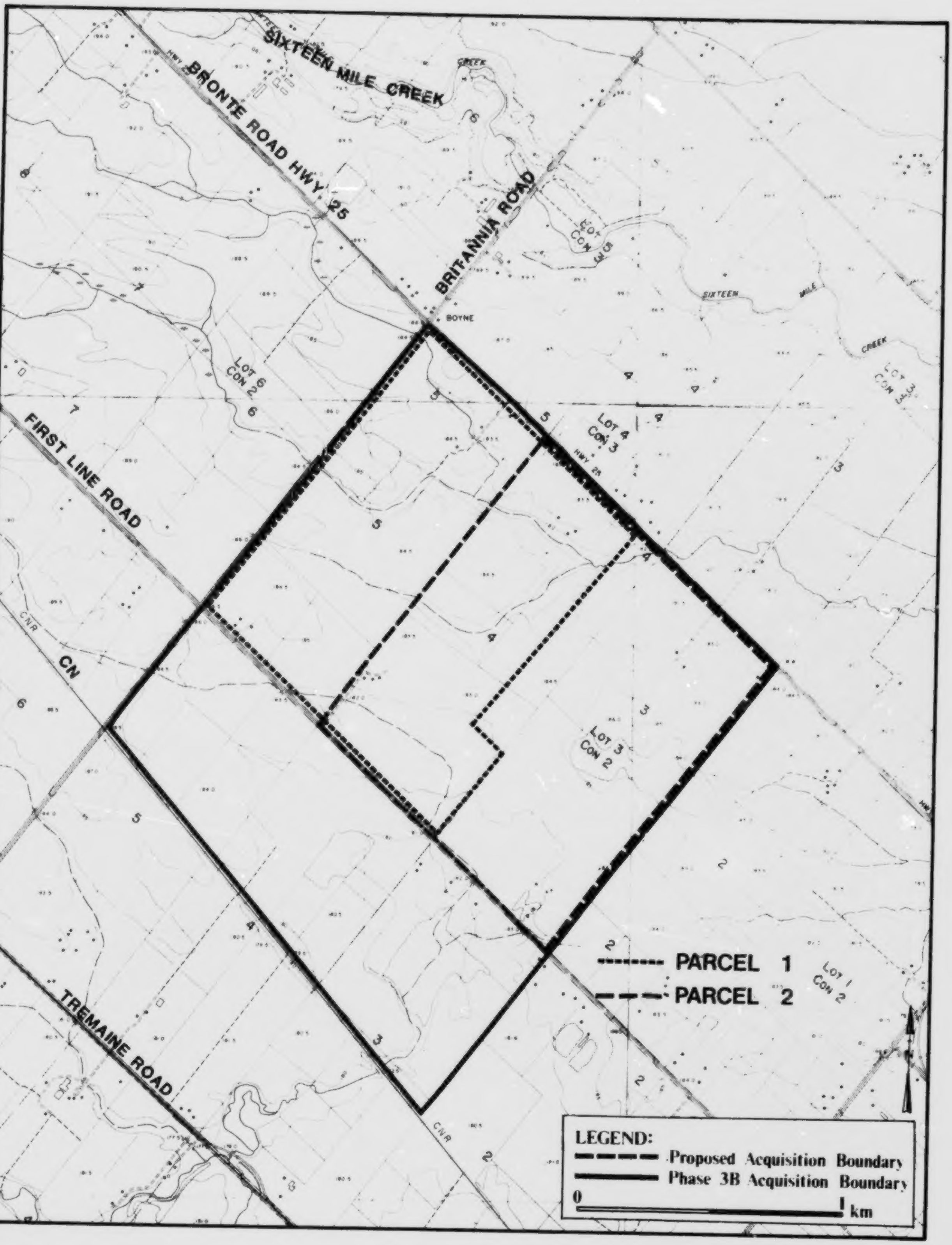
Although the northeast parcel included six fewer residences than the southeast parcel within the 1 000 metre study area, its proximity to the rural cluster of Boyne presented a marginally greater land use constraint.

After considering the various constraints, the Site Selection Team chose the southeast parcel as the preferred location for facilities development. The reasons for this selection are documented in the Dillon Site Selection report.

LF-3C

Candidate site LF-3C was 259 ha in size at the outset of Phase 4A. During the constraint mapping exercise, the Site Selection Team deleted certain properties within the site boundary from consideration for facilities development due to inherent constraints. These properties were located in the northwest and northeast corners of the site. The properties and reasons for their elimination are contained in the Dillon Site Selection report.

There were no major land use constraints identified for LF-3C, as there were few sensitive residential or commercial uses within the selected 1 000 metre study area or in the general site vicinity.


SIXTEEN MILE CREEK
BRONTE ROAD HWY 25
BRITANNIA ROAD
BOYNE
LOT 6 CON 2
LOT 4 CON 3
LOT 3 CON 3
LOT 3 CON 2
LOT 1 CON 2
SIXTEEN MILE CREEK
HWY 25
FIRST LINE ROAD
CN
CNR
TREMAINE ROAD
PARCEL 1
PARCEL 2
LEGEND:
Proposed Acquisition Boundary
Phase 3B Acquisition Boundary
0
1 km

PI-1N

REFINEMENT OF SITE BOUNDARIES

FIGURE 4.1

As a result of these deletions, the remaining 206 ha parcel was deemed by the Site Selection Team to be required in order to maximize the area available for landfilling. No other potential parcels were identified. The resulting site boundaries after these refinements are illustrated in Figure 4.2.

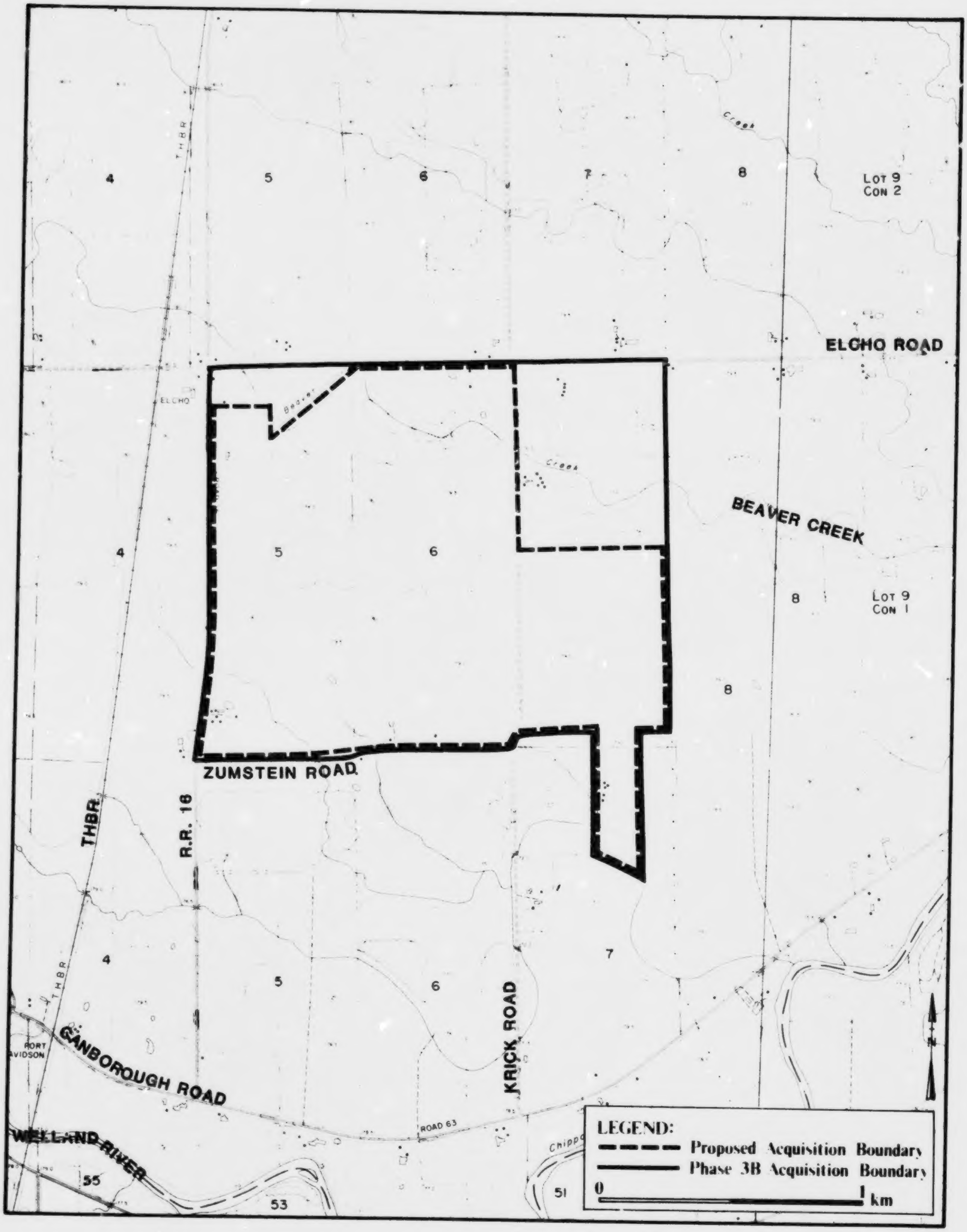
It should be noted that during Phase 4A a question arose concerning the site size required for site LF-3C. The land use consultant's analysis of the impact this may have on the ranking of siting options is described in the Sensitivity Analyses subsection of Chapter 8.

LF-1E

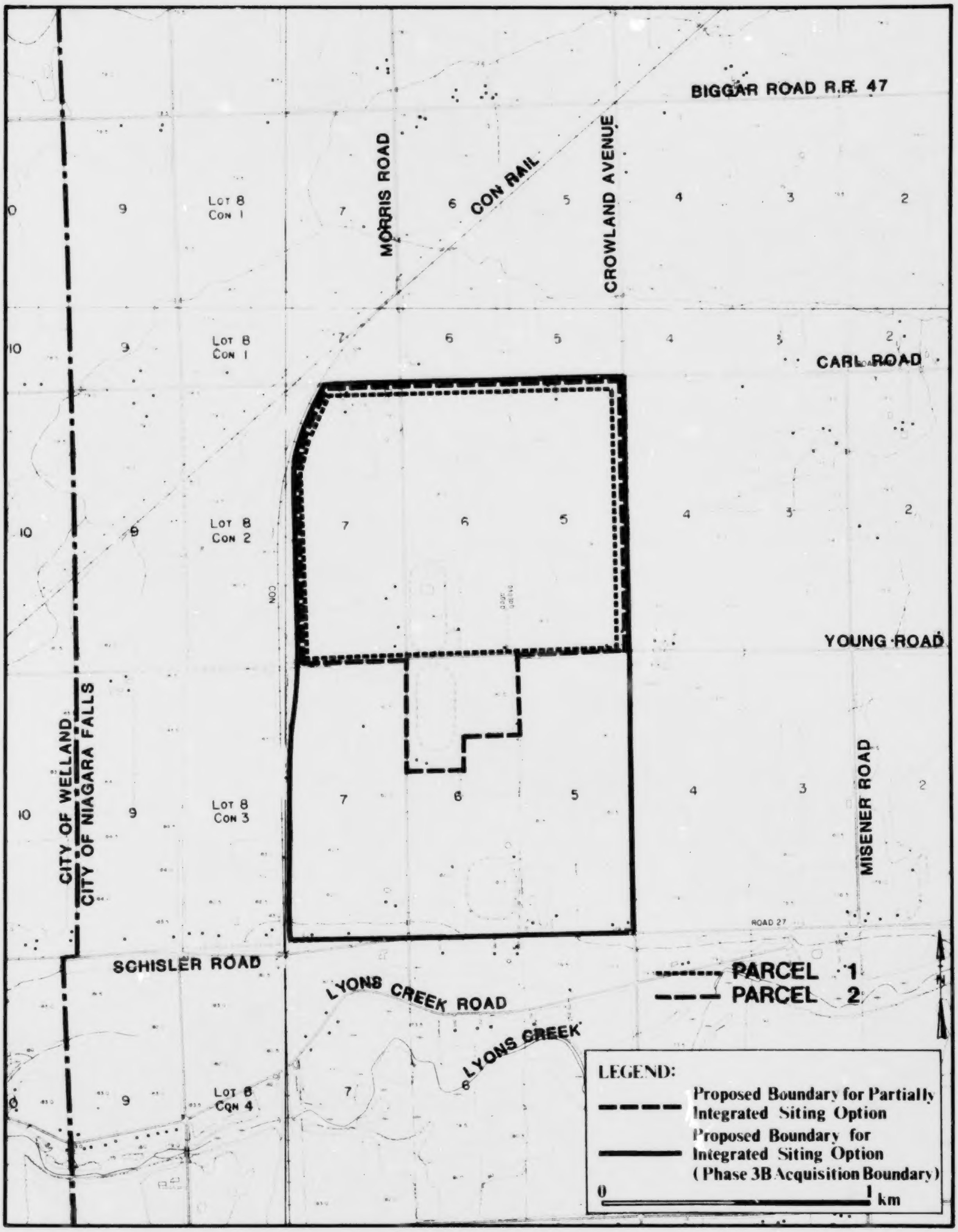
Initially, candidate site LF-1E comprised some 273 ha prior to the refinement of its boundaries. During the constraint mapping exercise, the Site Selection Team identified a hydrogeologic constraint in the southern half of LF-1E, rendering a portion of this area unsuitable for facilities development. Two potential parcels for the location of treatment facilities were subsequently identified, one comprising the north half of the site, the second consisting of the north half plus part of the south. These parcels are illustrated in Figure 4.3.

The land use consultant compiled the constraint data outlined in Table D.1 in Appendix D. The data show that the addition of the lands in the southern half of the original site adds one on-site residence and fifteen additional residences in the 1 000 metre study area, as well as reducing the distance between the site and the cluster of residences near Cook's Mills.

As a result, the land use consultant clearly preferred the smaller parcel located entirely in the northern half of the site (Parcel Option 1 in Table D.1). As with LF-3C, a question arose concerning the site size required for site LF-1E. The impact of revised site boundaries on the ranking of siting options is discussed in the Sensitivity Analyses subsection of Chapter 8.


Creek
4
5
6
7
8
LOT 9
CON 2
THBR
ELCHO ROAD
ELCHO
Beaver
Creek
BEAVER CREEK
4
5
6
8
LOT 9
CON 1
8
ZUMSTEIN ROAD
THBR
R.R. 16
4
5
6
7
THBR
KRICK ROAD
PORT
DAVIDSON
GAINBOROUGH ROAD
ROAD 63
WELLAND RIVER
Chippawa
55
53
51
LEGEND:
Proposed Acquisition Boundary
Phase 3B Acquisition Boundary
0
1 km
N

LF-3C
REFINEMENT OF SITE BOUNDARIES
FIGURE 4.2


BIGGAR ROAD R.R. 47
MORRIS ROAD
CON RAIL
CROWLAND AVENUE
CARL ROAD
YOUNG ROAD
MISENER ROAD
CITY OF WELLAND
CITY OF NIAGARA FALLS
SCHISLER ROAD
LYONS CREEK ROAD
LYONS CREEK
ROAD 27
Lot 8 Con 1
Lot 8 Con 1
Lot 8 Con 2
Lot 8 Con 3
Lot 8 Con 4
PARCEL 1
PARCEL 2
N
LEGEND:
Proposed Boundary for Partially Integrated Siting Option
Proposed Boundary for Integrated Siting Option (Phase 3B Acquisition Boundary)
0
1 km

LF-1E
REFINEMENT OF SITE BOUNDARIES
FIGURE 4.3

This information was provided to the Site Selection Team and contributed to the selection of the preferred siting boundaries. The final boundaries are illustrated in Figure 4.3. Detailed reasons for these boundary refinements are contained in the Dillon Site Selection report.

RANKING OF PARCEL OPTIONS

The following Table 4.2 summarizes the preference of the land use consultant regarding the ranking of the identified parcel options under consideration during the refinement of site boundaries exercise:

TABLE 4.2
PHASE 4A - REFINEMENT OF SITE BOUNDARIES
RANKING OF PARCEL OPTIONS

Site	Option	Rank	Rationale
PI-1N	2	1	. one more on-site residence displaced (but no commercial displacement) and 6 more residences impacted in 1 000 m study area, but maximizes distance from residential cluster of Boyne (infilling potential)
	1	2	. proximity to rural cluster of Boyne offsets slight advantages with respect to off-site residential and commercial impacts
LF-1E	1	1	. one fewer on-site residence displaced, 15 fewer in 1 000 m study area; maximizes distance from residential cluster at Cook's Mills
	2	2	. several more residences impacted in vicinity of this parcel option
LF-3C	· no parcel options identified		

These rankings were provided to the Site Selection Team to assist in the refinement. The Site Selection Team's preferred site boundaries were utilized as the basis for the assessment of rail access options (Chapter 5), access road options (Chapter 6) and the location of the physical/chemical treatment plant for partially integrated siting options (Chapter 7), prior to the detailed comparative evaluation of the siting options as outlined in Chapter 8.

As noted, the land use consultant's analysis of the revised site boundaries which may be necessary at sites LF-1E and LF-3C if partial solidification is selected is discussed in the Sensitivity Analyses subsection of Chapter 8.

5. RAIL ACCESS OPTIONS

INTRODUCTION

Rail access options are potential railway spur lines which provide for rail service from nearby rail trunk lines to the candidate sites.

The purpose of introducing rail access options to the evaluation of candidate sites is primarily to maximize the opportunity to reduce the risk impacts, and costs associated with truck volumes by providing an alternative transportation mode to candidate sites, while ensuring that the impacts and costs of rail access would not offset the advantages associated with rail service. It is noted that the provision of rail service was considered to involve only the bulk transport of additives and reagents to be used in the solidification process; to complement, but not totally replace, truck transport.

Rail access was only considered as a method to mitigate impacts. Rail service was, therefore, not an absolute requirement for facility operation and was not assumed to occur for purposes of the comparison of siting options. The lack of rail service to the site would not necessitate the rejection of the site. Reference should be made to the M.M. Dillon report, Site Selection Process. Phase 4A: Selection of a Preferred Site(s) - Transportation (1985) for details on the transportation considerations related to the provision of rail service.

The analysis of rail access options was undertaken in a two step process:

1) The preparation of constraint maps at a scale of 1:10,000 to identify the rail access options from the existing trunk rail lines to the candidate site.

2) The comparative evaluation of the rail access options into each site, using data collected and mapped at a scale of 1:10,000.

The first step, involving constraint mapping, was similar to the constraint mapping exercise performed in Phase 3B of the site selection process, with the notable exception that the scale was considerably enlarged from 1:50,000 to 1:10,000 to allow more detailed identification of constraints. The objective of the comparative evaluation exercise was to select a preferred rail access link to each of the candidate sites using the rail access options identified in the constraint mapping step.

STEP 1 - CONSTRAINT MAPPING

In order to initially identify possible rail access options to each candidate site, the process of constraint mapping was chosen by the Site Selection Team. In this process, the various site selection consultants to OWMC identified major features which could constrain the provision of rail service from the perspectives of the various disciplines. The Site Selection Team formulated a composite of these constraining features and subsequently identified several rail access options to some of the candidate sites. No rail options were identified for candidate sites LF-2N and PI-13N due to the number and potential severity of impacts associated with the provision of rail service to these sites. It was, therefore, assumed that rail service was not considered to be an opportunity at these two sites.

In addition, PI-27E is directly served by a railway trunk line which traverses this site. Rail access can thus be achieved without off-site impacts. It was unnecessary, therefore, to consider rail access options to this site.

IDENTIFICATION OF FACTORS

In order to determine the land use constraints to assist the Site Selection Team to identify rail access options, the land use consultant considered the complete list of factors and indicators identified at the outset of Phase 4A. Because data for these factors and indicators had already been collected in Phase 3B and at the outset of Phase 4A, the consultant refined the list to three key factors to which land use impacts were generally limited. All other factors used during Phases 3B and 4A were screened from use in this analysis because they cannot be used in constraint mapping or do not reveal differences between rail access alternatives. These are:

- existing residences and clusters of residences
- existing commercial and industrial facilities
- residential land use designations

These three factors were mapped on 1:10,000 base maps of the candidate sites and their vicinities. The constraints were generally applicable to the lands between the railway trunk line and the candidate site, which was identified by the transportation consultant, M.M. Dillon Limited. Reference should be made to Site Selection Process. Phase 4A: Selection of a Preferred Site - Transportation by M.M. Dillon Limited.

The three factors were not equally rated in terms of levels of constraint. Existing residences and clusters of residences were determined to be the most significant constraints from a land use perspective due to the potential negative impacts on these uses from noise and general disruption associated with rail operations. These uses were rated as high constraints; the greater the number of residences, the higher the level of constraint.

Existing commercial and industrial facilities were rated as moderate constraints as these uses are considered less sensitive to noise and other disruptive impacts than are residential uses. Effective mitigation/compensation and relocation of such uses is more feasible with commercial and industrial uses than with residential uses.

The third factor, residential land use designations could present a high level of constraint if future residential development is planned in close proximity to rail access options. However, a residential land use designation was only evident in one case, which was LF-2N. In this case, the designation only confirms existing development, and does not provide for significant new residential development. For this reason, this factor was rated as a low constraint with respect to the provision of rail service.

Ranking of Factors

Rank	Factor	Constraint Rating	Rationale
1	Existing Residences and Clusters of Residences	High	. residential uses considered to be most sensitive to noise impact.
2	Existing Commercial and Industrial Facilities	Moderate	. potentially sensitive to noise impacts, but potentially mitigatible through design and/or relocation.
3	Residential Land Use Designation	Low	. potentially high constraints to future residential development, but none identified.

These rankings, along with the mapped data of land use constraints, were provided to the Site Selection Team for incorporation into the composite constraint mapping process used to identify rail access options to the five candidate sites for which such options were identified.

STEP 2 - COMPARATIVE EVALUATION

The second level of analysis involved the comparative evaluation of rail access options for each candidate site for which rail alternatives were identified. The purpose of this step was to compare and evaluate the rail access options identified in the constraint mapping step in order to select one preferred access option for each candidate site. This exercise involved 5 of the 8 candidate sites (LF-2N and PI-13N were not considered, while PI-27E had no off-site options).

IDENTIFICATION OF FACTORS

The three factors utilized in the constraint mapping step were the basis of the comparative evaluation of rail access options. In the absence of rail access options to LF-2N, the factor "residential land designation" was dropped as there were no such designations in proximity to any of the identified rail access options. Hence, the two factors identified for the comparative evaluation were "number of residences" and "commercial facilities".

RANKING OF FACTORS

In order to determine the level of constraint and sensitivity to impacts associated with rail access options, the two land use factors were ranked by degree of sensitivity to rail service disruption and level of constraint from a land use perspective. Table 5.1 below details the ranking of these factors and the rationale therefore.

TABLE 5.1

RANKING OF FACTORS - COMPARATIVE EVALUATION OF RAIL ACCESS OPTIONS

Rank	Factor	Rationale
1	Number of Residences	. residential uses considered to be most sensitive to noise and disruptive impacts.
2	Commercial Facilities	. potentially sensitive to noise and disruption, but not considered as sensitive as residential uses due to possibility of mitigation and/or compensation.

DATA COLLECTION AND ANALYSIS

The data collected for these factors were mapped on 1:10,000 scale maps of the candidate sites and the rail access options leading to these sites. Two impact zones (study areas) were identified by the transportation consultant, M.M. Dillon Limited, along each rail access option, these being a 170 metre zone and a 250 metre zone, both flanking the access rail options.

The 170 metre impact zone represents the area flanking each side of a rail spur line within which the maximum noise impacts could be expected to occur. The 250 metre impact zone is based on a Transport Canada study which identified a zone outside of which the impacts of short range catastrophic events such as explosions or fires are minimal. Although impacts are potentially greater closer to the rail service line, for comparative evaluation purposes the land use consultant considered potential impacts to be uniform within the entire 250 metre impact zone. The analysis is based, therefore, strictly on the numbers of residential and commercial uses within 250 metres of the rail access option. Residential uses were considered more sensitive than commercial uses, thereby representing higher constraint.

The detailed comparative analysis of rail access options does not extend into the site acquisition area since it is assumed that all land uses within the site area would be displaced by the waste treatment facility. The analysis also does not address existing trunk rail lines as these were not considered to be part of the current study.

The land use consultant reviewed the mapped results of the data collection process, tabulated the residential and commercial uses along the rail access options, and formulated judgments as to the preferred rail access options to each site based on the observations. The data for the five sites under consideration (LF-3C, LF-9C, LF-1E, LF-4N and PI-1N) are contained in Table E.1 in Appendix E. The results of the ranking of rail options, along with the reasons for these rankings, are presented in the following section.

RANKING OF RAIL ACCESS OPTIONS

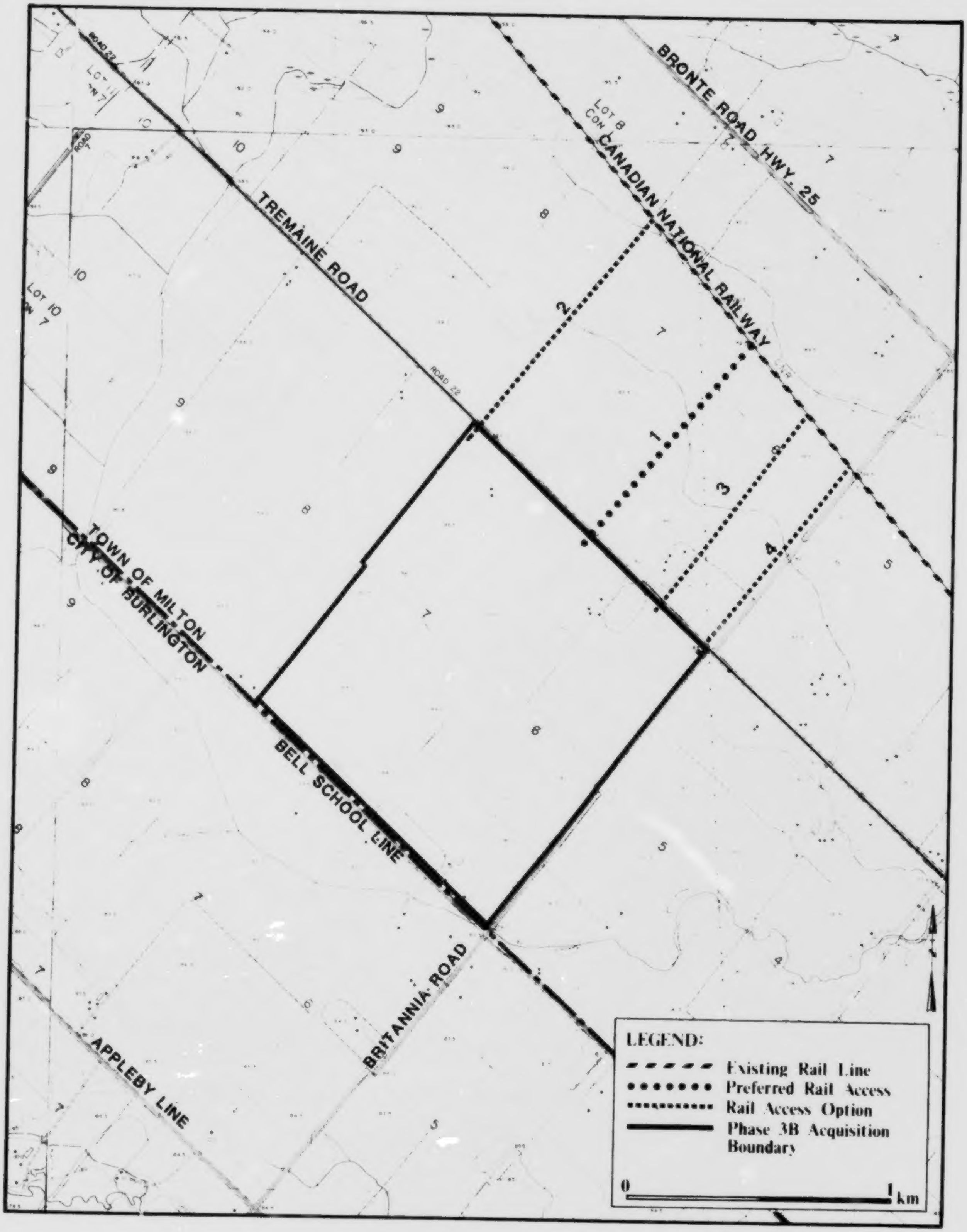
The ranking of rail access options is based on the land use consultant's judgment of the potential impacts to residences within 250 metres of the rail access options and proximity to residential and commercial uses adjacent to the impact zones.

The purpose of the ranking was to determine which rail options presented an opportunity to minimize impacts from a land use perspective. These could then be integrated into the review by the Site Selection Team to determine whether overall siting risks, impacts and costs could be reduced. The ranking process compared the rail access options to each site relative to each other in order to determine a preferred route.

A summary of the ranking of rail access options, from most suitable to least suitable, for each of the 5 identified candidate sites is presented below in Table 5.2. The locations of the options are illustrated in Figures 5.1 to 5.5 inclusive.

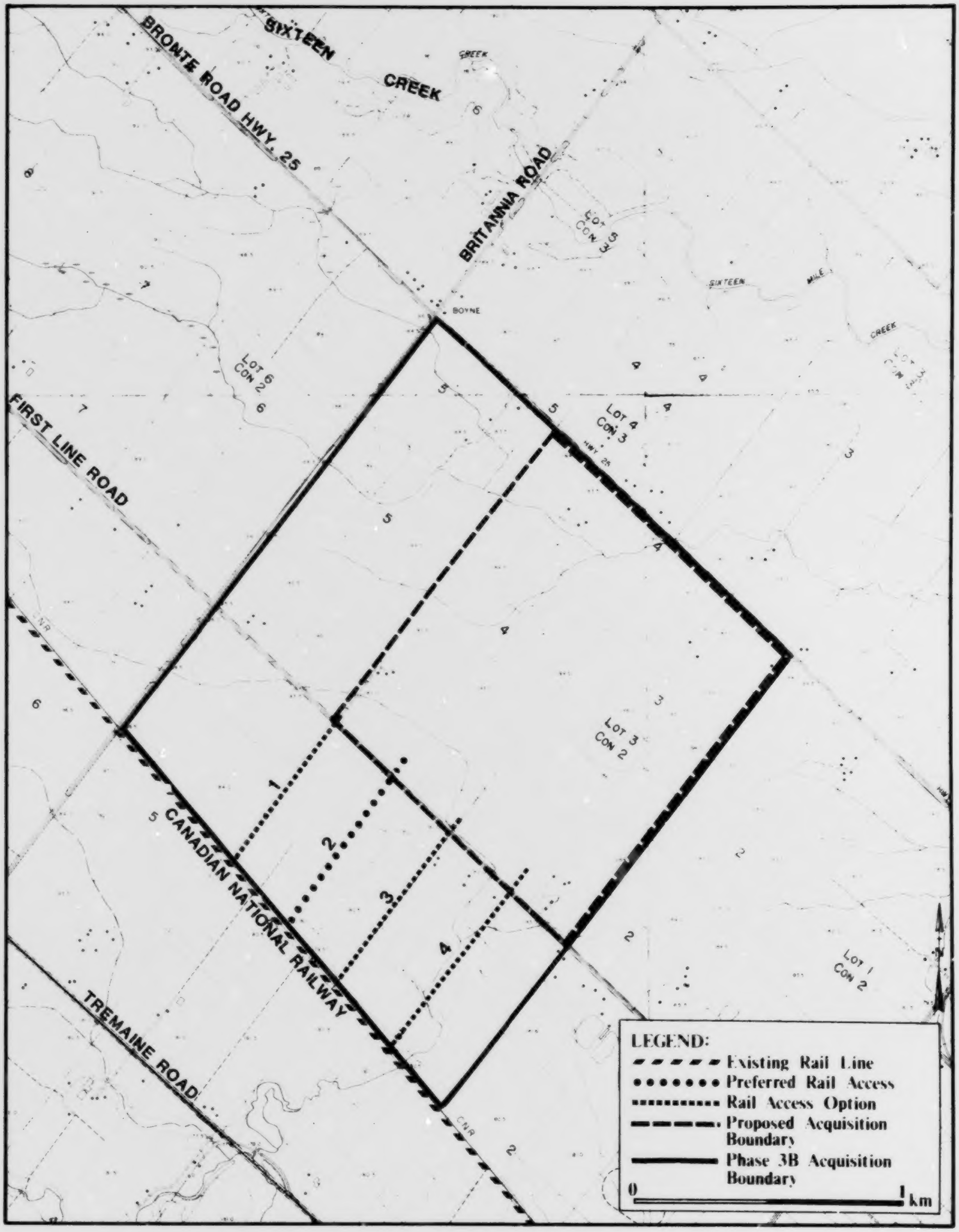
TABLE 5.2
PHASE 4A - COMPARATIVE EVALUATION OF RAIL ACCESS OPTIONS
SUMMARY OF RANKING

Site	Rail Access Option	Rank	Rationale
LF-4N	Options 1, 2, 4	1	. no residences or commercial facilities impacted.
	Option 3	2	. 1 residence but no commercial facilities impacted.
PI-1N	Options 1, 2	1	. no residences or commercial facilities impacted.
	Options 3, 4	2	. 2 residences but no commercial facilities impacted.
LF-3C	Options 1, 2	1	. no residences or commercial facilities impacted.
	Option 3	2	. 6 residences and 1 commercial use within 250 metre impact zone.
LF-9C	Option 5	1	. no residences or commercial facilities impacted.
	Option 4	2	. no residences but 1 commercial facility impacted.


BRONTE ROAD HWY. 25
CANADIAN NATIONAL RAILWAY
TREMAINE ROAD
ROAD 22
TOWN OF MILTON
CITY OF BURLINGTON
BELL SCHOOL LINE
BRITANNIA ROAD
APPLEBY LINE
LOT 8 CON 7
LOT 10 CON 7
1
2
3
4
LEGEND:
Existing Rail Line
Preferred Rail Access
Rail Access Option
Phase 3B Acquisition Boundary
0
1 km

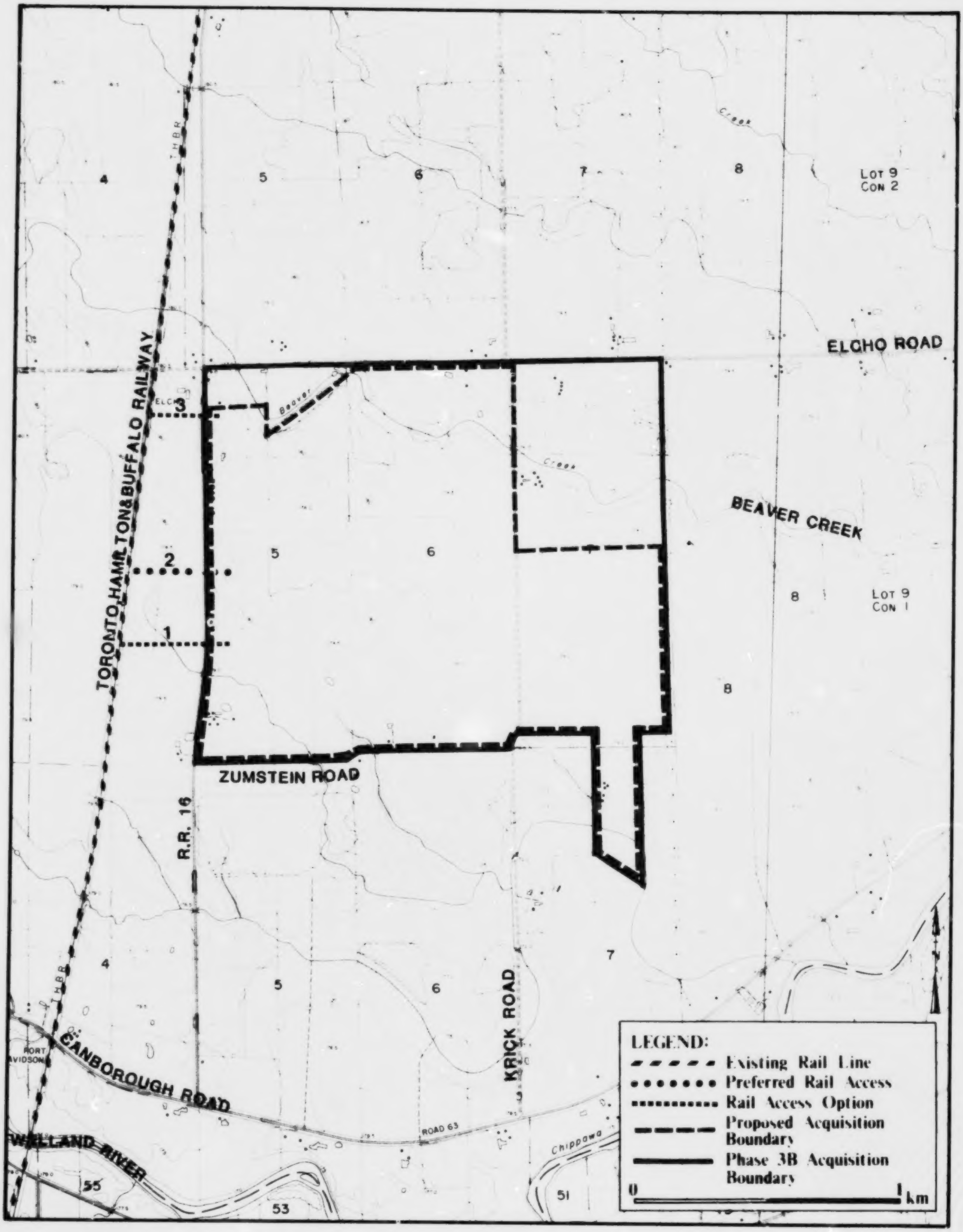
LF-4N RAIL ACCESS

FIGURE 5.1


SIXTEEN
CREEK
BRONTE ROAD HWY. 25
BRITANNIA ROAD
BOYNE
LOT 5 CON 3
SIXTEEN MILE CREEK
LOT 6 CON 2
LOT 4 CON 3
HWY 25
FIRST LINE ROAD
LOT 3 CON 2
CNR
CANADIAN NATIONAL RAILWAY
TREMAINE ROAD
LOT 1 CON 2
1
2
3
4
LEGEND:
Existing Rail Line
Preferred Rail Access
Rail Access Option
Proposed Acquisition Boundary
Phase 3B Acquisition Boundary
0
1 km

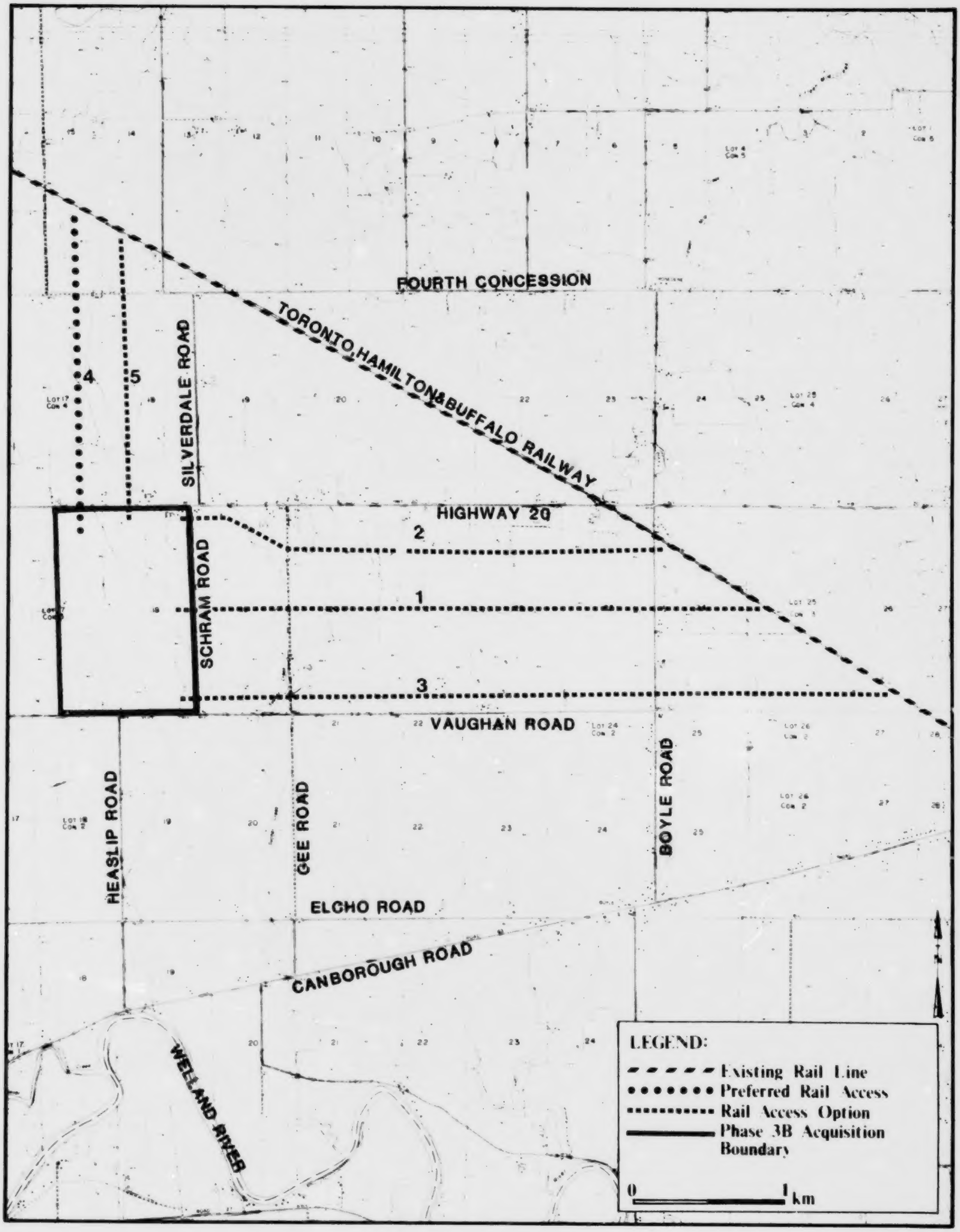
PI-1N RAIL ACCESS

FIGURE 5.2


TORONTO HAMILTON & BUFFALO RAILWAY
T.H.B.R.
ELCHO ROAD
BEAVER CREEK
Beaver Creek
Creek
LOT 9 CON 2
LOT 9 CON 1
4
5
6
7
8
3
2
1
ZUMSTEIN ROAD
R.R. 16
KRICK ROAD
CANBOROUGH ROAD
WELLAND RIVER
PORT DAVIDSON
ROAD 63
Chippawa
55
53
51
LEGEND:
Existing Rail Line
Preferred Rail Access
Rail Access Option
Proposed Acquisition Boundary
Phase 3B Acquisition Boundary
0
1 km

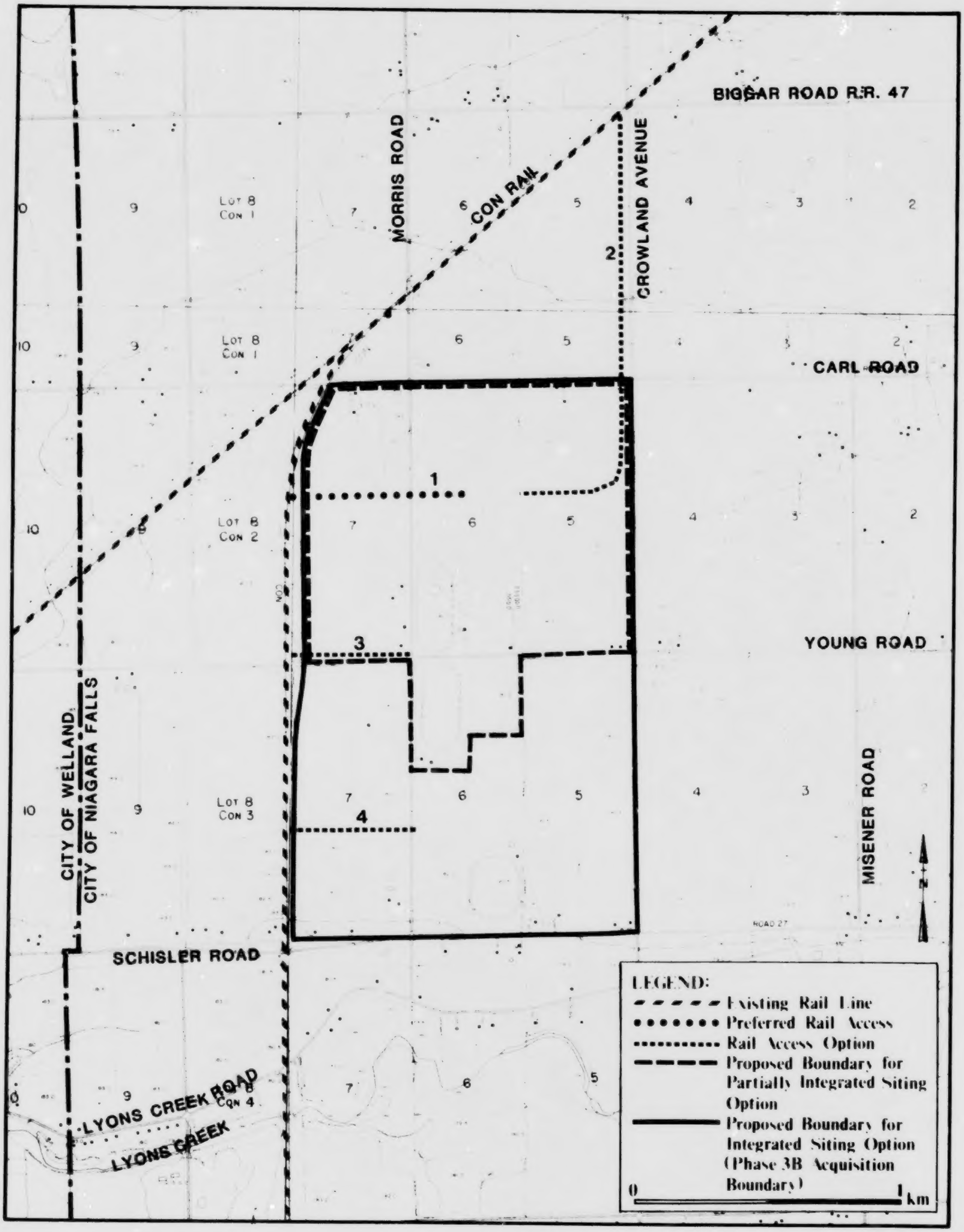
LF-3C
RAIL ACCESS

FIGURE 5.3


FOURTH CONCESSION
TORONTO HAMILTON & BUFFALO RAILWAY
SILVERDALE ROAD
4
5
HIGHWAY 20
2
1
3
SCHRAM ROAD
VAUGHAN ROAD
HEASLIP ROAD
GEE ROAD
BOYLE ROAD
ELCHO ROAD
CANBOROUGH ROAD
WELLAND RIVER
LEGEND:
Existing Rail Line
Preferred Rail Access
Rail Access Option
Phase 3B Acquisition Boundary
0
1 km

LF-9C
RAIL ACCESS

FIGURE 5.4


BIGGAR ROAD R.R. 47
MORRIS ROAD
CON RAIL
CROWLAND AVENUE
CARL ROAD
YOUNG ROAD
MISENER ROAD
SCHISLER ROAD
LYONS CREEK ROAD
LYONS CREEK
CITY OF WELLAND
CITY OF NIAGARA FALLS
Lot 8 Con 1
Lot 8 Con 1
Lot 8 Con 2
Lot 8 Con 3
Lot 8 Con 4
10
9
7
6
5
4
3
2
1
2
3
4
N
LEGEND:
Existing Rail Line
Preferred Rail Access
Rail Access Option
Proposed Boundary for Partially Integrated Siting Option
Proposed Boundary for Integrated Siting Option (Phase 3B Acquisition Boundary)
0
1 km

LF-1E

RAIL ACCESS

FIGURE 5.5

TABLE 5.2
(Continued)
PHASE 4A - COMPARATIVE EVALUATION OF RAIL ACCESS OPTIONS
SUMMARY OF RANKING

Site	Rail Access Option	Rank	Rationale
	Option 1	3	. 5 residences but no commercial facilities impacted.
	Option 2	4	. 10 residences and 1 commercial facility impacted.
	Option 3	5	. 15 residences and 2 commercial facilities impacted.
LF-1E	Options 1, 3	1	. almost entirely on-site - no residences or commercial facilities impacted.
	Option 4*	2	. no residences or commercial facilities impacted.
	Option 2	3	. 1 residence but no commercial facilities impacted.

The rankings were combined with those produced by other consultants to OWMC and assisted in the determination of preferred rail access options. Reference should be made to the M.M. Dillon Site Selection report for the preferred rail access options which were selected.

---

* This option was deleted after the refinement of site boundaries.

6. ACCESS ROAD OPTIONS

INTRODUCTION

This section of the report discusses the land use impacts associated with the truck transportation of wastes, additives and reagents and treated residues along access roads to the candidate sites. The purpose is to determine the preferred access road option to each candidate site. The preferred access road option would then be considered as part of the comparison of siting options to determine the preferred site(s).

The land use analysis of access roads contributed to the site selection process in two ways. First, the ranking of access road options from a land use perspective was utilized by the Site Selection Team in its comparative evaluation and selection of preferred access road options. Second, the data collected by the land use consultant, particularly with respect to residential uses along the access roads, were used by other consultants to OWMC in their assessment of risks and impacts. Reference should be made to the Site Selection Process. Phase 4A: Selection of a Preferred Site(s) - Social Analysis (1985) report prepared by the Institute of Environmental Research and the Site Selection report prepared by M.M. Dillon Limited for details of the land use inputs to these components of the site selection process.

The comparative evaluation of options for each site occurred in two steps:

Step 1 - preliminary screening of access roads (preliminary Phase 4A analysis).

Step 2 - detailed comparative evaluation of a short list of access road options (Phase 4A analysis).

The preliminary screening step involved the access roads options previously identified in Phase 3B for which a preferred option could not be determined on the basis of the constraint level data collected in Phase 3B, supplemented by new access road options identified in Phase 4A. These are listed in Table F.1 in Appendix F.

The detailed comparative evaluation involved the collection and analysis of new, more detailed data in Phase 4A, which included specific existing and future land uses within a selected study area adjacent to the access road options. These data were mapped on either 1:10000 or 1:50000 scale base maps (depending on the level of detail required), tabulated into data matrices and utilized as the basis for comparison of the access road options. The list of access road options subject to this comparative evaluation is presented in Table F.3 in Appendix F.

Both steps in this process are discussed in the following sections.

PART 1 - PRELIMINARY SCREENING OF ACCESS ROAD OPTIONS

IDENTIFICATION OF FACTORS AND INDICATORS

During the Phase 3B site area screening process, access roads were evaluated on the basis of several factors and indicators at a scale of 1:50,000. This process resulted in the Site Selection Team's determination of one or more preferred access routes to each of the remaining candidate sites. The non-preferred routes in most cases were eliminated. However, where clear determination of a preferred route was not possible due to the scale of mapping used, the road options were retained for further scrutiny in Phase 4A. In addition, new access road options were identified in Phase 4A in an effort to determine the least constrained route to each site.

The access roads which were considered during the preliminary screening stage are listed in Table F.1 in Appendix F.

To maintain consistency of approach and treatment of access roads in the preliminary stage of Phase 4A with that of Phase 3B, the same factors and indicators were utilized as the starting point. Having collected and analysed much of the data in Phase 3B, the land use consultant was able to eliminate or screen several of the factors and indicators which did not contribute to the anlaysis. The reasons for screening could include an absence of significant differences between access road options, or an inability to put a factor or indicator into effect based on the data results. The following table presents the screened factors and indicators, along with the reason for screening. With the exception of the Existing Residents factor, these factors and indicators were screened for all sets of access road options.

TABLE 6.1
PHASE 4A - PRELIMINARY SCREENING OF ACCESS ROAD OPTIONS
SCREENING OF FACTORS AND INDICATORS

Study Area	**Factor**	**Indicator**	**Reason for Screening**
Local Access Roads	Existing Residents	. Distance through strip residential development (km)	. No strip residential development on any local access road.
	Future Residents	. Distance through residential land designations (km)	. No residential designations on any local access road.
	Existing Commercial and Industrial Uses	. Distance through commercial areas (km)	. No commercial areas on on any local access road.
		. Distance through industrial areas (km)	. No industrial areas on any local access road.
	Future Commercial and Industrial Uses	. Distance through designated commercial areas (km)	. No designated commercial areas on any local access road.
		. Distance through designated industrial areas (km)	. No designated industrial areas on any local access road.

Following the preliminary factor/indicator screening, only one factor in each of the two study areas and two indicators remained for consideration. These are summarized as follows:

TABLE 6.2
PHASE 4A - PRELIMINARY SCREENING OF ACCESS ROAD OPTIONS IDENTIFICATION OF FACTORS AND INDICATORS

Study Area	Factor	Indicator
Local Access Roads	Existing Residents	. Number of residences
Regional Access Roads	Existing Residents	. Distance through strip residential development (km). (subindicator - community population)

The "distance through strip residential development" indicator was further refined in the land use analysis to include a sub-indicator, "community population". This sub-indicator served to provide some detailed insight into the size of the population centre through which the regional access roads passed. The land use consultant concluded that the potential impacts were generally greater for larger settlement areas (ie. greater population) than for smaller communities.

Therefore, given two access road options with the identical distance through strip residential development, the settlements with the lower population total would be preferred. Population data were provided to the land use consultant by the Institute of Environmental Research Inc.

RANKING OF FACTORS, INDICATORS AND STUDY AREAS

The land use consultant utilized only one factor in the preliminary screening of access road options, that being "Existing Residents". This factor, however, was applied to both local access roads and regional access roads.

The Existing Residents factor was best expressed by two indicators at the 1:50000 scale:

(i) number of residences (along local access roads); and
(ii) distance through strip residential development (km) (along regional access roads).

In terms of ranking of the indicators, there were few local access roads remaining in the preliminary screening of access road options. Potential impacts to residences along these roads were, therefore, relatively minor in comparison to those along the regional access roads. For this reason, the distance through strip residential development along regional access roads was considered to be more significant to the preliminary screening of access road options than was the number of residences along local access roads. The following Table 6.3 summarizes the ranking of factors and indicators.

TABLE 6.3
PHASE 4A - PRELIMINARY SCREENING OF ACCESS ROAD OPTIONS
RANKING OF FACTORS AND INDICATORS

1. **Ranking of Factors**

- Only 1 factor identified - existing residents - no ranking

2. **Ranking of Indicators**

Indicator	Study Area	Rationale
1 distance through strip residential development (km)	. regional access roads	. regional access roads represent greater proportion and length of access road option under consideration - greater scope of potential impact to residences enroute.
2 number of residences	. local access roads	. few local access roads under consideration through potential impacts to individual residences may be equally severe - generally lesser overall scope of potential impacts to residences enroute.

DATA COLLECTION AND ANALYSIS

The collection of access road data for the preliminary screening of access road options occurred in Phase 3B. No further data collection was required during the first level of screening in Phase 4A. The number of existing residences along local access roads was determined through roadside field investigations carried out by the land use consultant. Similarly, the distance through strip residential development on regional access roads was determined by roadside field investigations and confirmed by scaling of aerial photographs and land use maps. Strip residential development was defined by the land use consultant as clusters of a minimum of 15 residences within a circle with a radius of 500 metres. This definition was consistent with that used for residential clusters in Phase 3B.

In addition, population data were received from the Institute of Environmental Research for each of the communities through which the access roads passed. This information was used to supplement the residential strip development data to determine potential impacts along access roads. It was assumed that the same distance through residential development would have greater potential impact on larger communities than on smaller ones.

In the case of both indicators, aerial photographs were used to confirm residence counts along both regional and local access roads. Where discrepancies were noted, further field investigations were performed.

Scaling of Indicators

The indicators utilized in this stage of the refinement of siting options related to the only factor identified from the Phase 3B access road analysis, "Existing residents".

Analysis of these data included scaling or grouping the observed resident counts and distances through strip residential development into 3 levels of constraint - Low (L), Medium (M), and High (H). The lower the number of residences and travelled distances through residential clusters, the lower the level of constraint.

The purpose of assigning constraint levels is to identify thresholds in the data which reveal critical differences in potential impacts along the various access road options.

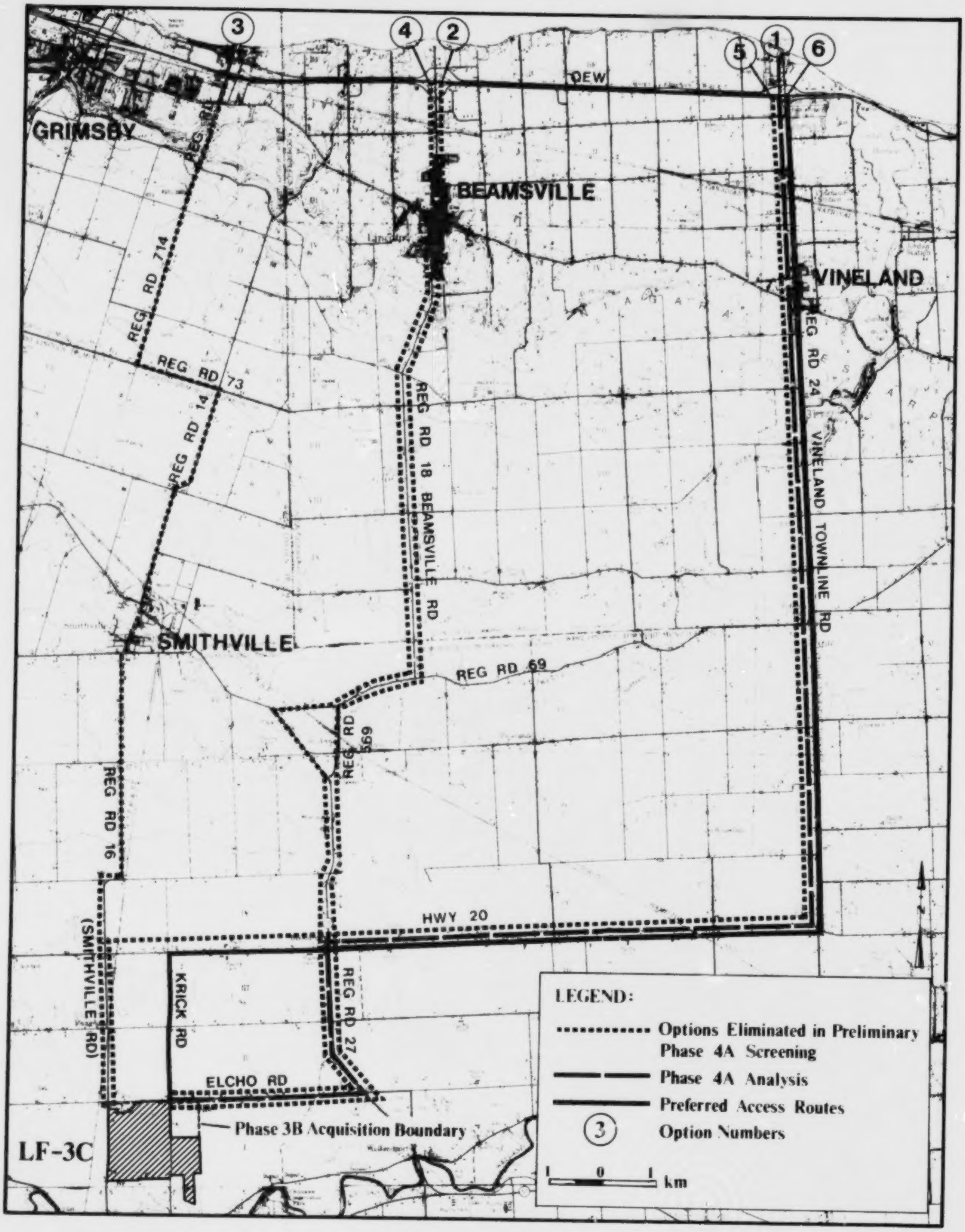
Table 6.4 summarizes the scaling of indicators relevant to the preliminary screening of access roads, and includes a rationale for this scaling.

TABLE 6.4

PHASE 4A - PRELIMINARY ACCESS ROAD SCREENING

SUMMARY OF SCALING

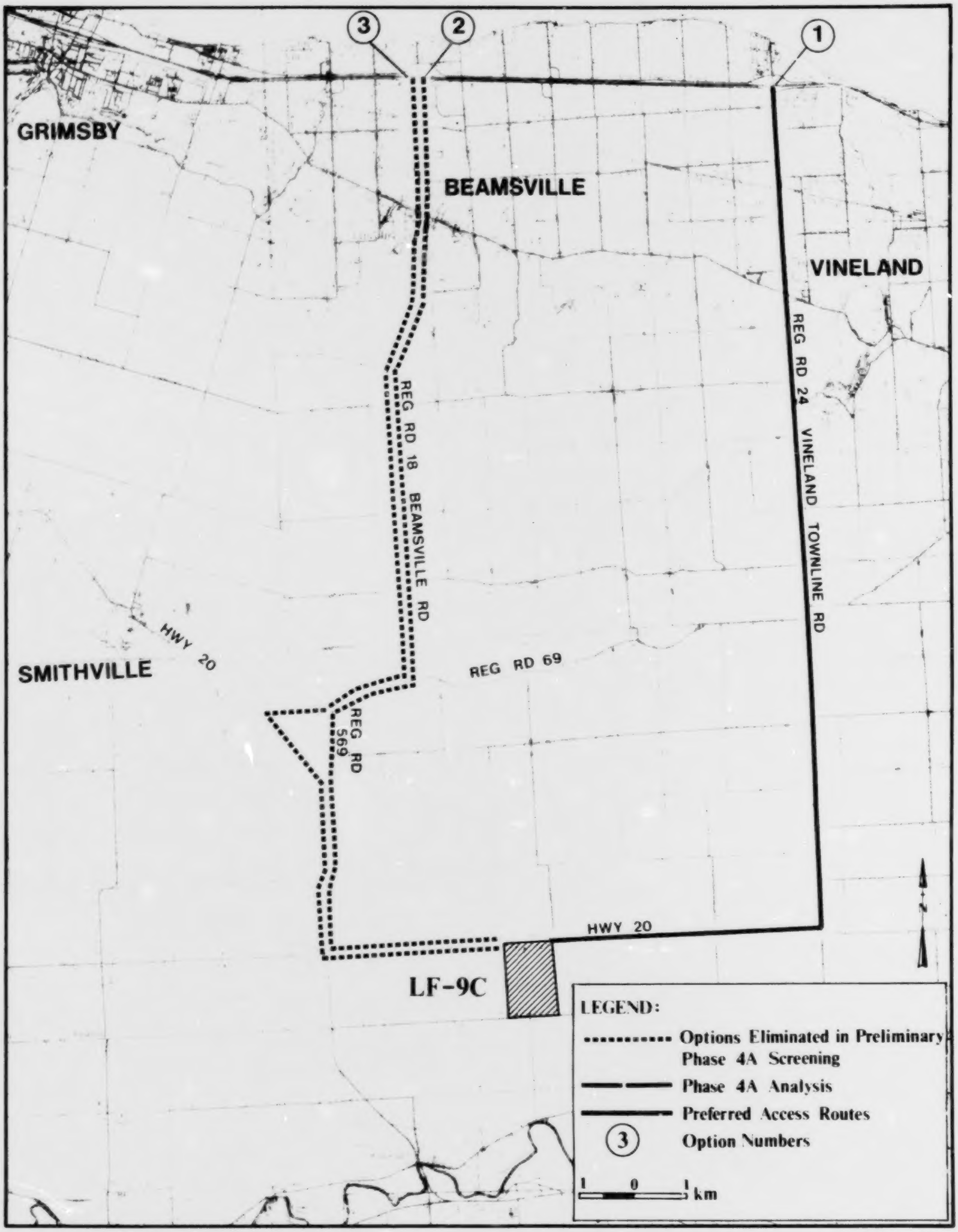
Study Area	**Factor**	**Indicator**	**Low**	**Med.**	**High**	**Rationale**
Local Access	Existing Residents	Number of residences	0–9	10–19	20+	. few local access roads utilized –most options impact few residences (low constraint); natural break-points utilized at medium to high constraint ranges.
Regional Access Roads	Existing residents	Distance through strip residential development (km)	0	up to 4 km	4 km+	. relatively even distribution into 3 levels of constraint; natural breakpoints utilized.
	(Sub-indicator)	Community population	0–1 999	2 000 9 999	10 000 +	. Communities of various population sizes affected, ranging from approx. 25 to 30 000; clustering occurs at low end of scale (smallest communities)


③
④ ②
⑤ ① ⑥
QEW
GRIMSBY
REG RD
BEAMSVILLE
VINELAND
REG RD 714
REG RD 73
REG RD 14
REG RD 18 BEAMSVILLE RD
REG RD 24 VINELAND TOWNLINE RD
SMITHVILLE
REG RD 69
REG RD 569
REG RD 16 (SMITHVILLE RD)
HWY 20
KRICK RD
REG RD 27
ELCHO RD
Phase 3B Acquisition Boundary
LF-3C
LEGEND:
Options Eliminated in Preliminary Phase 4A Screening
Phase 4A Analysis
Preferred Access Routes
③ Option Numbers
1 0 1 km

LF-3C

PHASE 4A ACCESS ROADS

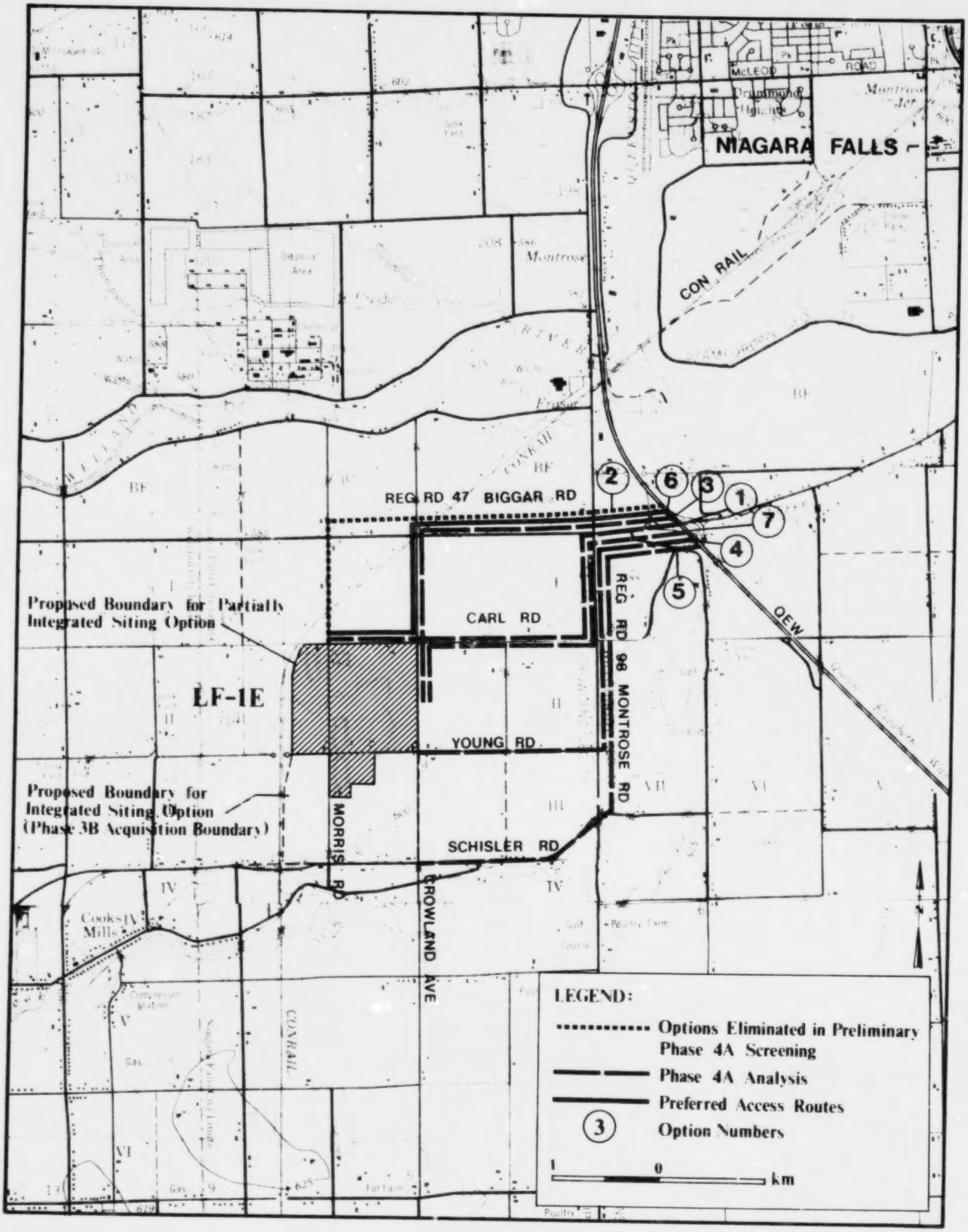
FIGURE 6.1


③
②
①
GRIMSBY
BEAMSVILLE
VINELAND
REG RD 24 VINELAND TOWNLINE RD
REG RD 18 BEAMSVILLE RD
HWY 20
SMITHVILLE
REG RD 69
REG RD 569
HWY 20
LF-9C
N
LEGEND:
Options Eliminated in Preliminary Phase 4A Screening
Phase 4A Analysis
Preferred Access Routes
③ Option Numbers
1 0 1 km

LF-9C

PHASE 4A ACCESS ROADS

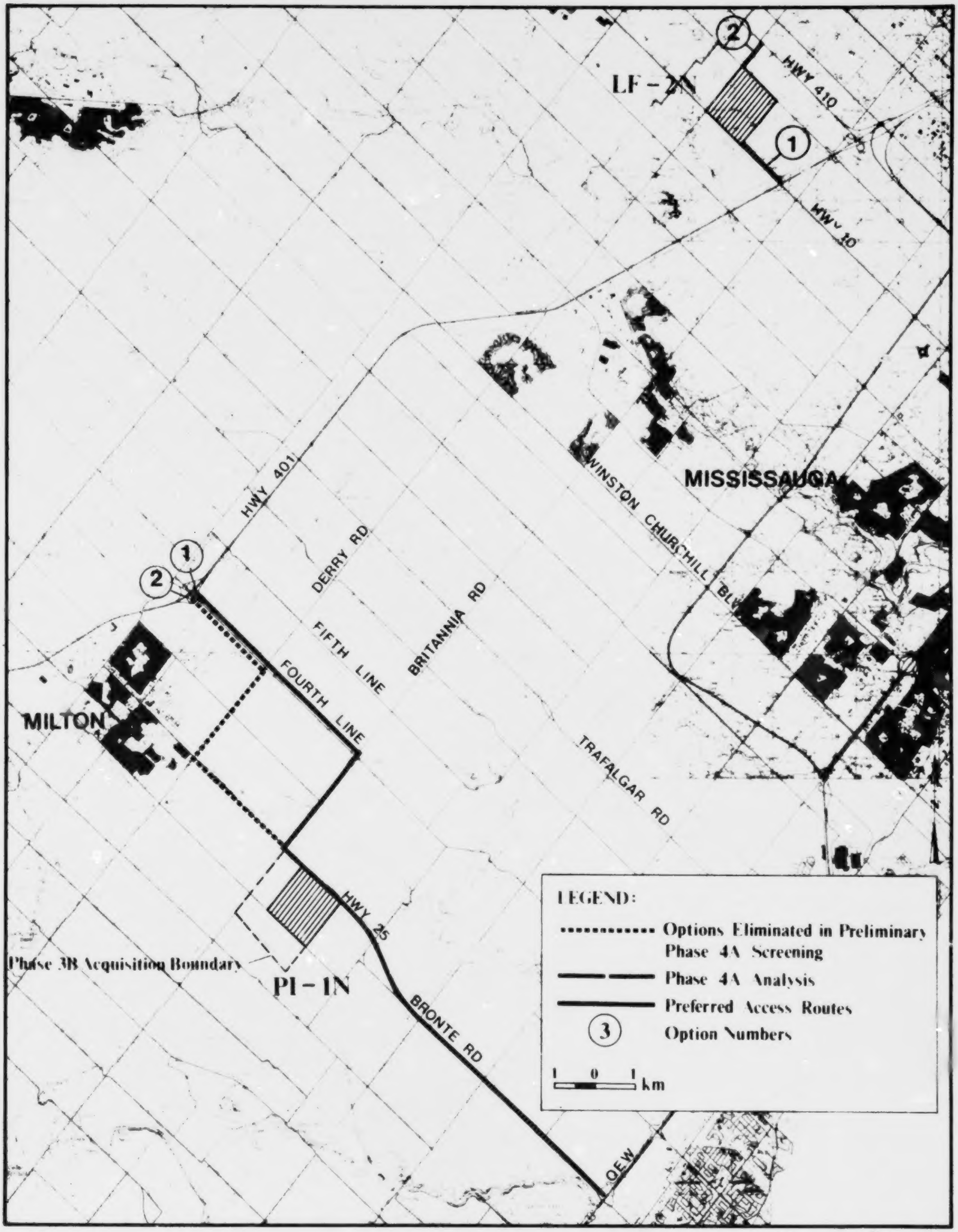
FIGURE 6.2


NIAGARA FALLS
McLEOD ROAD
Drummond Heights
Montrose
CON RAIL
CONRAIL
WELLAND RIVER
Fraser
BF
REG RD 47 BIGGAR RD
CARL RD
YOUNG RD
SCHISLER RD
REG RD 98 MONTROSE RD
MORRIS RD
CROWLAND AVE
QEW
Queen Elizabeth Way
LF-1E
Cooks Mills
Proposed Boundary for Partially Integrated Siting Option
Proposed Boundary for Integrated Siting Option (Phase 3B Acquisition Boundary)
I
II
III
IV
V
VI
VII
1
2
3
4
5
6
7
LEGEND:
Options Eliminated in Preliminary Phase 4A Screening
Phase 4A Analysis
Preferred Access Routes
③ Option Numbers
1
0
km

LF-1E

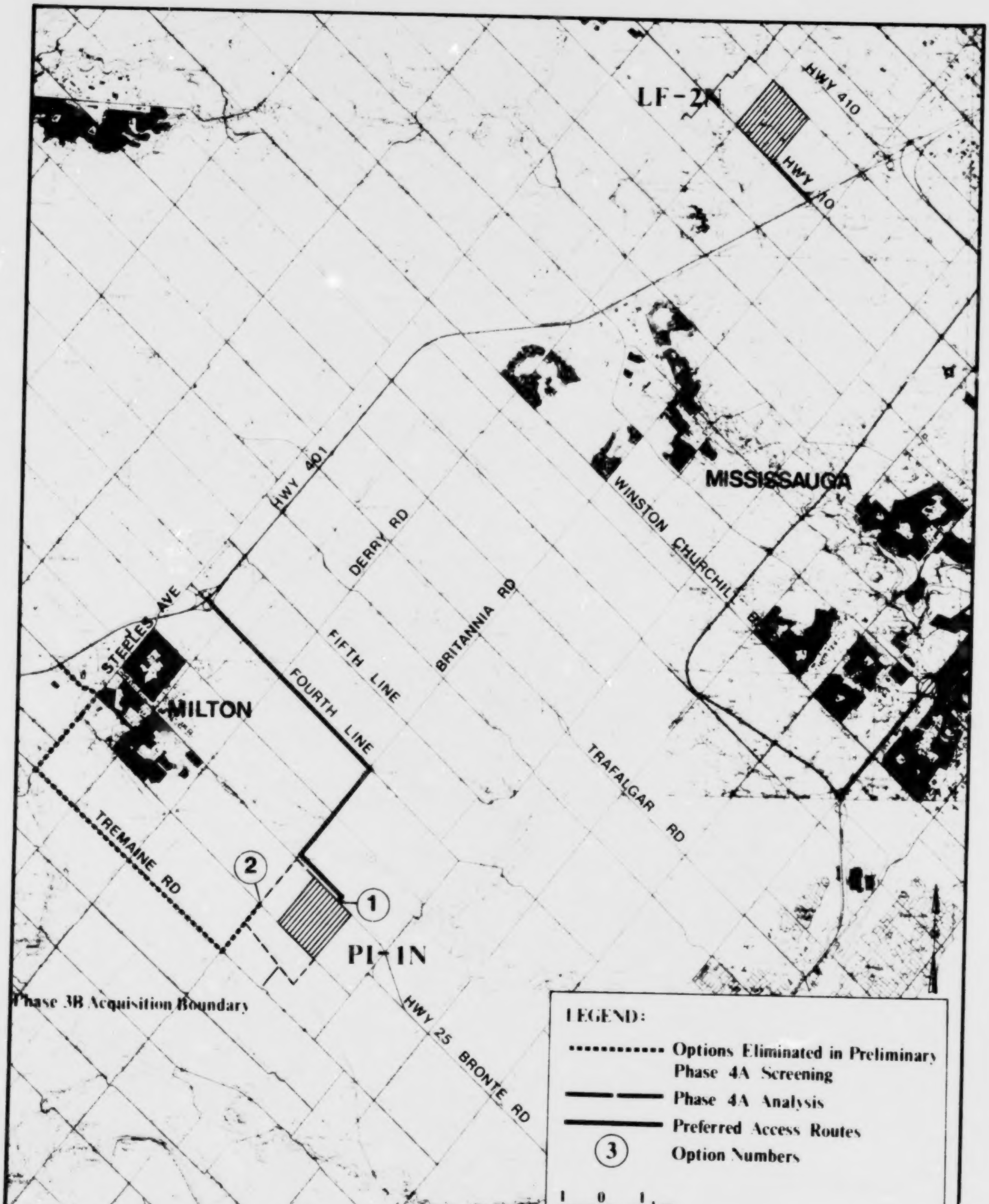
PHASE 4A ACCESS ROADS

FIGURE 6.3


②
LF-2N
HWY 410
①
HWY 10
MISSISSAUGA
WINSTON CHURCHILL BLVD
HWY 401
①
②
DERRY RD
FIFTH LINE
BRITANNIA RD
FOURTH LINE
MILTON
TRAFALGAR RD
HWY 25
Phase 3B Acquisition Boundary
PI-1N
BRONTE RD
QEW
LEGEND:
Options Eliminated in Preliminary Phase 4A Screening
Phase 4A Analysis
Preferred Access Routes
③ Option Numbers
1 0 1 km

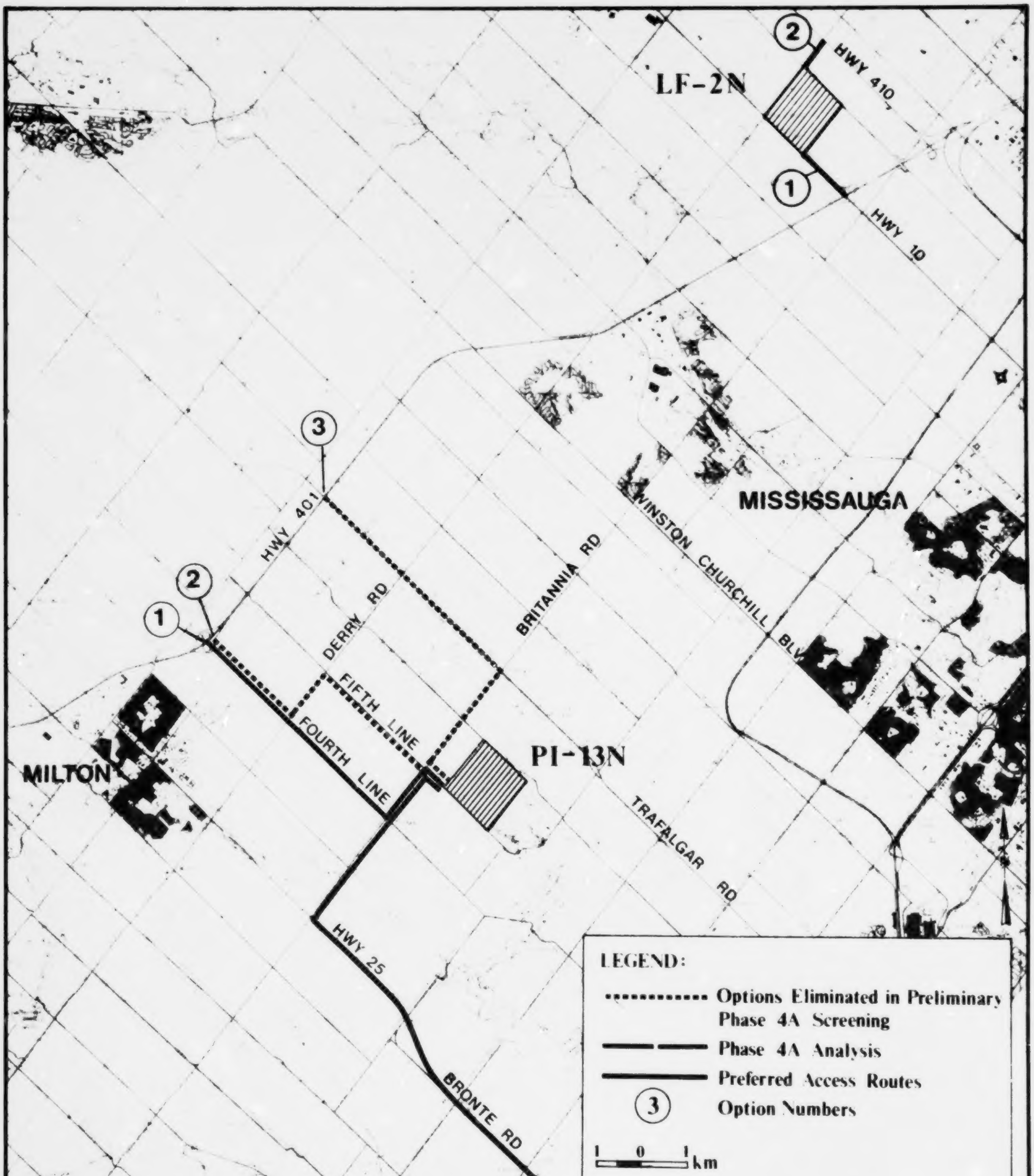
LF-2N/PI-1N
TO PI-1N
PHASE 4A ACCESS ROADS

FIGURE 6.4


LF-2N
HWY 410
HWY 410
MISSISSAUGA
HWY 401
DERRY RD
WINSTON CHURCHILL BLVD
BRITANNIA RD
STEELES AVE
FIFTH LINE
FOURTH LINE
MILTON
TRAFALGAR RD
TREMAINE RD
2
1
PI-1N
Phase 3B Acquisition Boundary
HWY 25 BRONTE RD
LEGEND:
Options Eliminated in Preliminary Phase 4A Screening
Phase 4A Analysis
Preferred Access Routes
3
Option Numbers
1 0 1 km

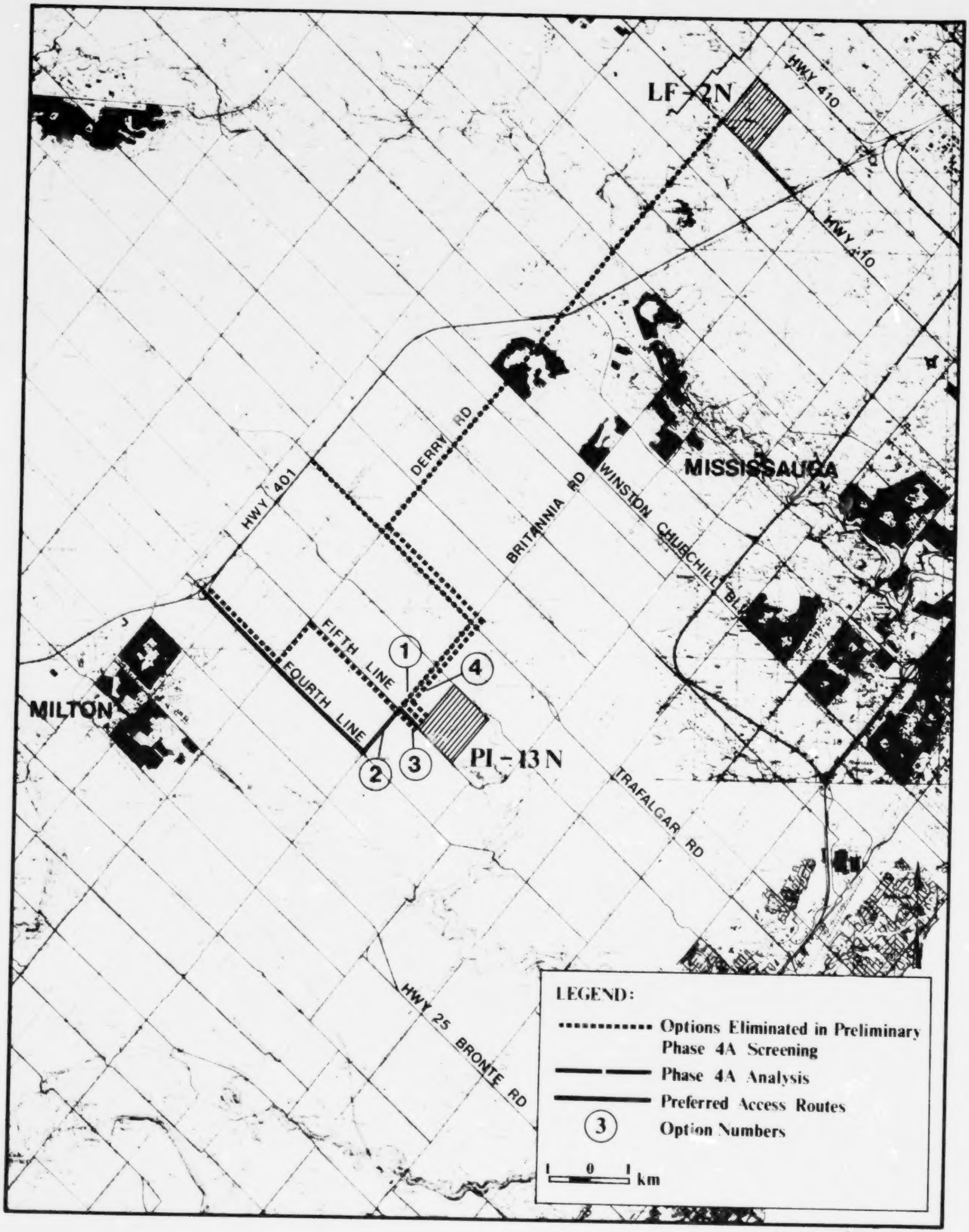
LF-2N/PI-1N
PI-1N TO LF-2N
PHASE 4A ACCESS ROADS

FIGURE 6.5


②
HWY 410
LF-2N
①
HWY 10
MISSISSAUGA
WINSTON CHURCHILL BLV
③
HWY 401
②
①
DERRY RD
BRITANNIA RD
FIFTH LINE
FOURTH LINE
MILTON
PI-13N
TRAFALGAR RD
HWY 25
BRONTE RD
LEGEND:
Options Eliminated in Preliminary Phase 4A Screening
Phase 4A Analysis
Preferred Access Routes
③ Option Numbers
1 0 1 km

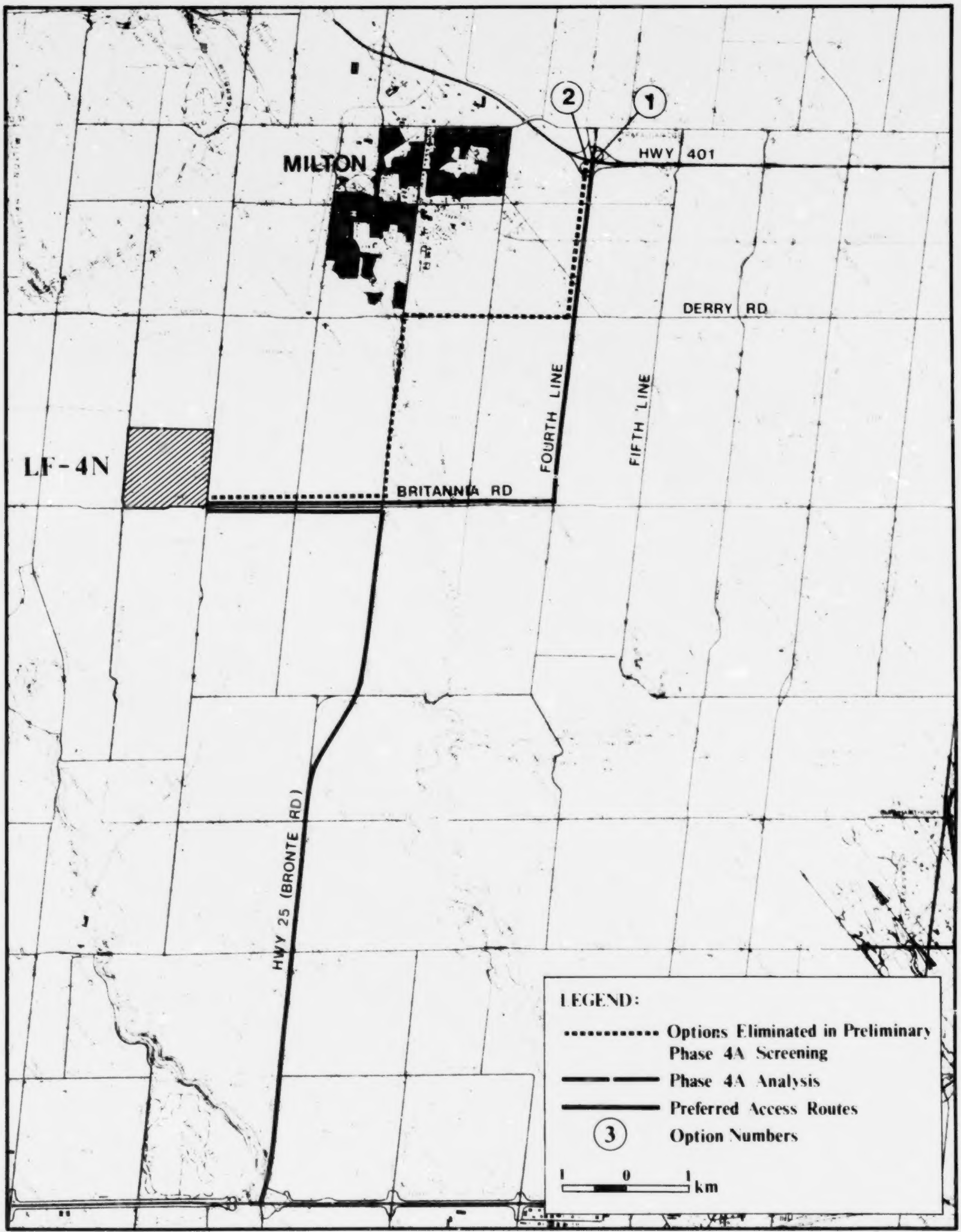
LF-2N/PI-13N
TO PI-13N
PHASE 4A ACCESS ROADS

FIGURE 6.6

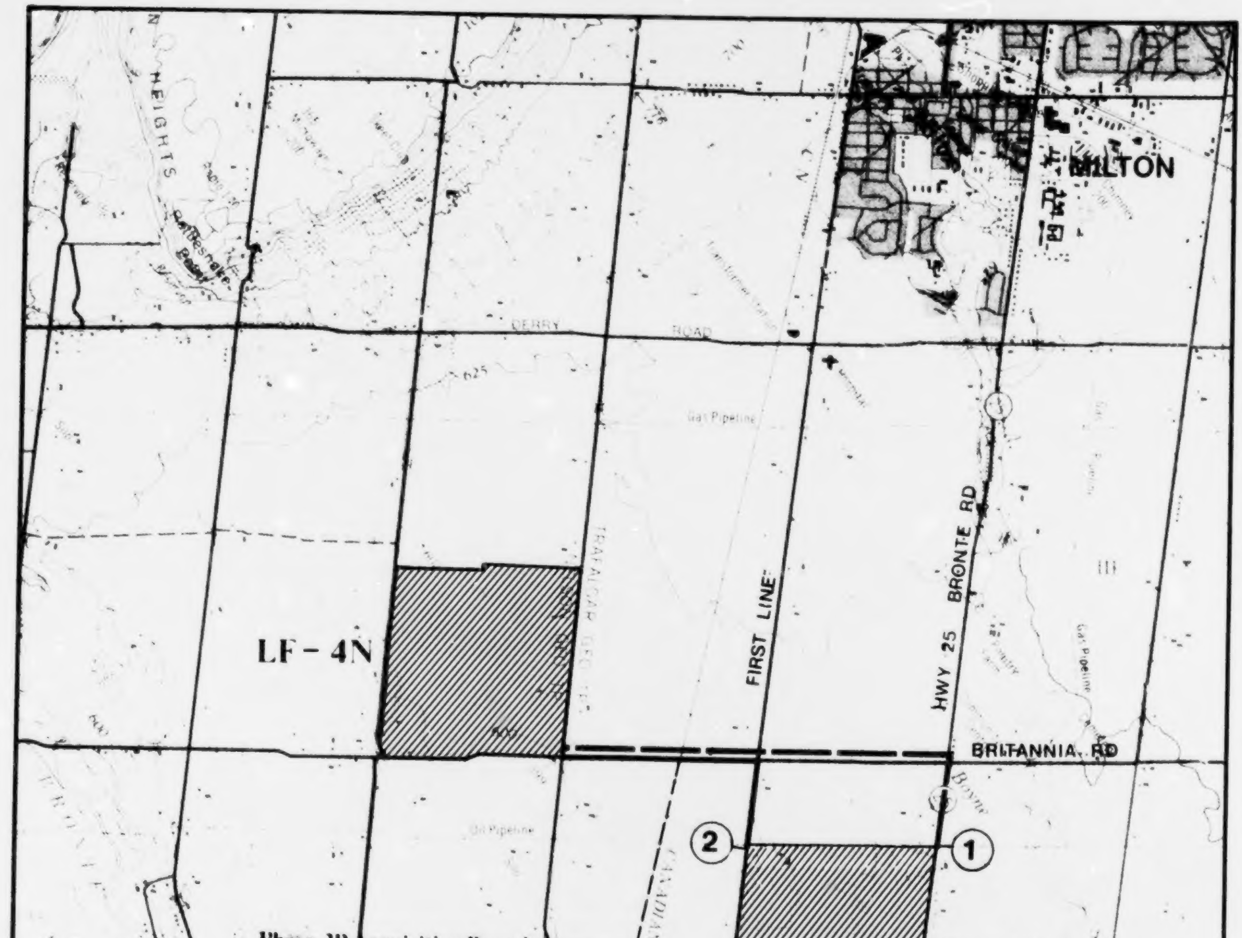

LF-2N
HWY 410
HWY 10
MISSISSAUGA
DERRY RD
HWY 401
BRITANNIA RD
WINSTON CHURCHILL BL
FIFTH LINE
FOURTH LINE
MILTON
1
2
3
4
PI-13N
TRAFALGAR RD
HWY 25 BRONTE RD
LEGEND:
Options Eliminated in Preliminary Phase 4A Screening
Phase 4A Analysis
Preferred Access Routes
3
Option Numbers
0
km

LF-2N/ PI-13N
PI-13N TO LF-2N
PHASE 4A ACCESS ROADS

FIGURE 6.7

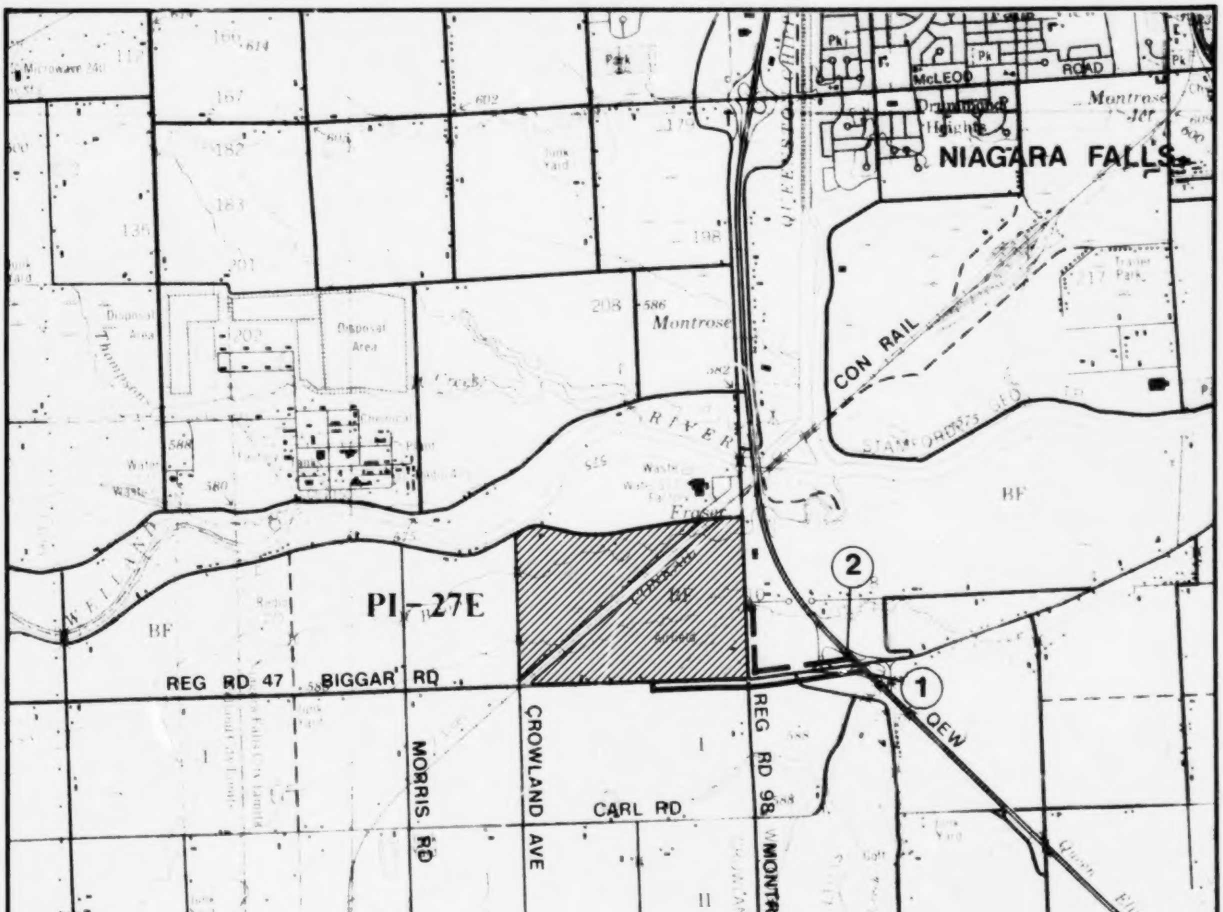

②
①
MILTON
HWY 401
DERRY RD
FOURTH LINE
FIFTH LINE
LF-4N
BRITANNIA RD
HWY 25 (BRONTE RD)
LEGEND:
Options Eliminated in Preliminary Phase 4A Screening
Phase 4A Analysis
Preferred Access Routes
③ Option Numbers
1 0 1 km

LF-4N /PI-1N
TO LF-4N
PHASE 4A ACCESS ROADS
FIGURE 6.8


MILTON
HEIGHTS
DERRY ROAD
Gas Pipeline
TRAFALGAR
FIRST LINE
HWY 25 BRONTE RD
LF - 4N
BRITANNIA RD
2
1
Oil Pipeline
Phase 3B Acquisition Boundary
PI - 1N
CANADIAN NATIONAL
Milton Town Limits
LOWER BASE LINE ROAD
Zimmerman
625
575
550
LEGEND:
Options Eliminated in Preliminary Phase 4A Screening
Phase 4A Analysis
Preferred Access Routes
3
Option Numbers
1
0
1 km

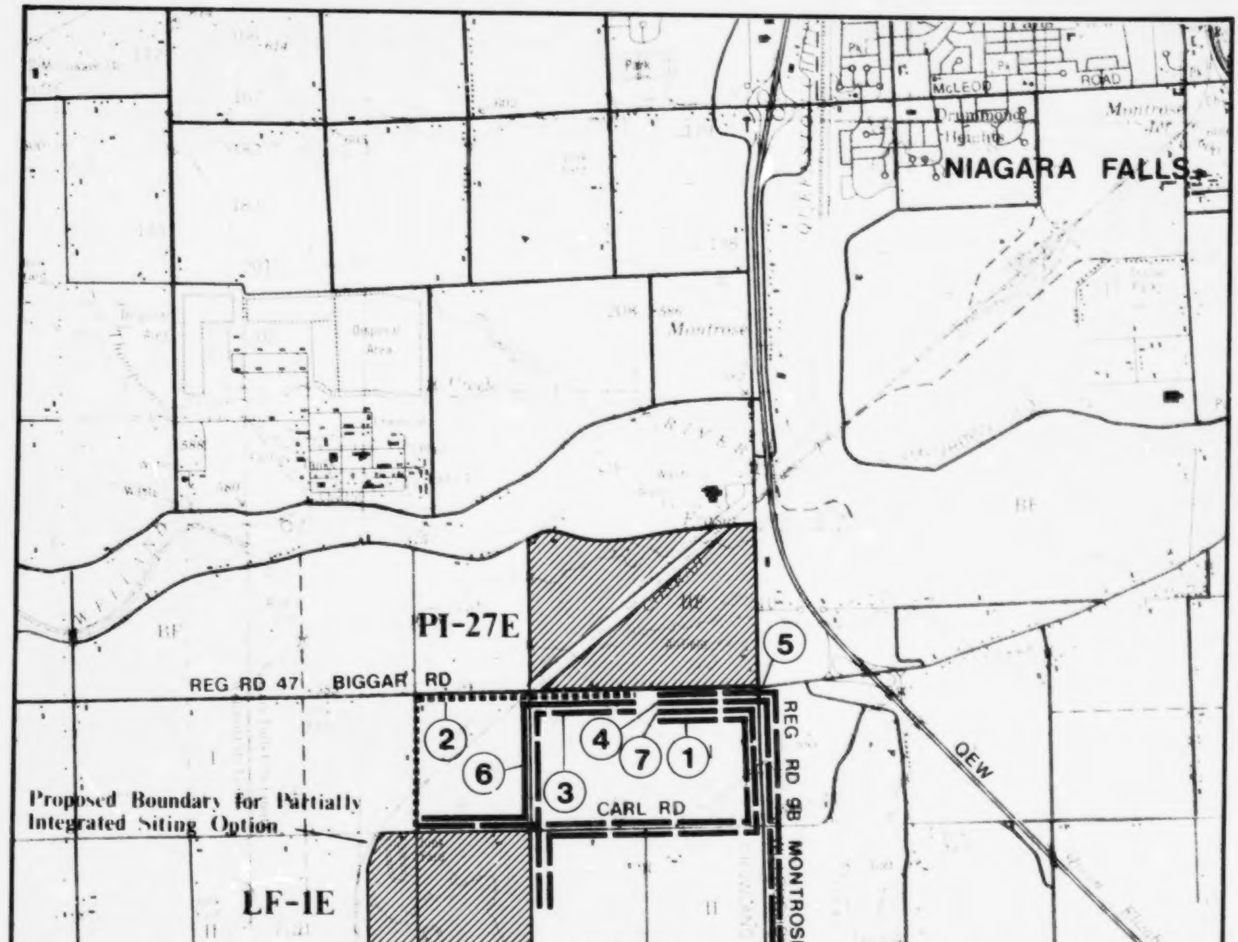
LF-4N/ PI-1N
PI -1N TO LF-4N
PHASE 4A ACCESS ROADS

FIGURE 6.9


NIAGARA FALLS
McLEOD
ROAD
Drummond Heights
Montrose Jct
Montrose
CON RAIL
RIVER
WELLAND
STAMFORD
BF
PI-27E
CONRAIL
Fraser
Disposal Area
Chemical
Waste
REG RD 47
BIGGAR RD
MORRIS RD
CROWLAND AVE
REG RD 98
MONTROSE RD
CARL RD
YOUNG RD
SCHISLER RD
QEW
Queen Elizabeth Way
Cooks Mills
Compressor Station
Gas
Golf Course
Poultry Farm
Fur Farm
Niagara Falls City Limits
I
II
III
IV
V
VI
VII
①
②
LEGEND:
Options Eliminated in Preliminary Phase 4A Screening
Phase 4A Analysis
Preferred Access Routes
③ Option Numbers
1 0 1 km

LF-1E /PI-27E
TO PI-27E
PHASE 4A ACCESS ROADS

FIGURE 6.10


NIAGARA FALLS
McLEOD ROAD
Drummond Heights
Montrose
RIVER
PI-27E
LF-1E
REG RD 47
BIGGAR RD
REG RD 98
MONTROSE RD
CARL RD
YOUNG RD
SCHISLER RD
MORRIS RD
CROWLAND AVE
QEW
CONRAIL
Cooks Mills
Disposal Area
BF
I
II
III
IV
V
VI
VII
5
2
4
7
1
6
3
Proposed Boundary for Partially Integrated Siting Option
Proposed Boundary for Integrated Siting Option (Phase 3B Acquisition Boundary)
LEGEND:
Options Eliminated in Preliminary Phase 4A Screening
Phase 4A Analysis
Preferred Access Routes
3
Option Numbers
1
0
1
km

LF-1E/ PI-27E
PI - 27E TO LF - 1E
PHASE 4A ACCESS ROADS

FIGURE 6.11

RANKING OF ACCESS ROAD OPTIONS (PRELIMINARY SCREENING)

The data collected during Phase 3B were analysed to determine the suitability of access road options to accommodate OWMC facility-bound traffic from a land use perspective. The access road options to each site were then ranked by the consultant in order of suitability from most suitable (i.e. lowest constraint) to least suitable (i.e. highest constraint) to represent the assessment of the preferred access road options from a land use perspective.

The rankings and the reasoning therefore are contained in Table 6.5. The data matrices for these access road options are contained in Table F.2 in Appendix F.

TABLE 6.5
PHASE 4A - PRELIMINARY SCREENING OF ACCESS ROAD OPTIONS
SUMMARY OF RANKING

Siting Option: LF-3C

Rank	Access Road Options	Rationale
1	Option 6	. utilizes a local road but no residences impacted (Low constraint . significant distance through residential strip development on regional access roads, particularly through Vineland (pop. 1 200) and Bismarck (pop. 50), but generally bypasses largest population centres in region.
2	Option 5	. utilizes no local roads (Low constraint) . regional access roads traverse same residential areas as Option 6, athough also impact on minor settlement of Vaughan.
3	Option 1	. utilizes a local road with several residences (High constraint) . regional access roads traverse same residential areas as Option 6, though for slightly shorter distance through Bismarck (pop. 50)
4	Option 4	. utilizes local road with several residences (High constraint) . same distance through residential strip development as Option 5 (High constraint)

TABLE 6.5

(Continued)

PHASE 4A - PRELIMINARY SCREENING OF ACCESS ROAD OPTIONS

SUMMARY OF RANKING

To LF-3C (cont'd)

Rank	Access Road Options	Rationale
5	Option 2	. utilizes same local road as Option 4 - several residences (High constraint) . longest distance through residential strip development on regional access roads, including Beamsville (pop. 5 000), St. Ann's (pop. 75) and Bismarck (pop. 50)
6	Option 3	. although this route does not utilize any local road (Low constraint) and has the relatively shortest distance through residential strip development on regional access roads, (High constraint), it traverses the heaviest populated area, Grimsby (pop. 16 000) as well as Smithville (pop. 2 000)

Siting Option: LF-9C

Rank	Access Road Options	Rationale
1	Option 1	. utilizes local road, but no residences impacted (Low constraint) . considerable distance through residential strip development in Vineland (4.5 km - High constraint) though lowest of all options in both length and population of developed areas
2	Option 3	. no local roads utilized (Low impact) . considerably greater distance through residential strip development (6.3 km - High constraint) and population centres, including Beamsville (pop. 5 000), Bismarck (pop. 50) and residential strips along Highway 20.
3	Option 2	. no local roads utilized (Low impact) substantially greater distance through residential strip development, including a rural residential cluster on Highway 20 (High constraint) . impacts same population centres as Option 3 as well as St. Ann's (pop. 75)

TABLE 6.5

(Continued)

PHASE 4A - PRELIMINARY SCREENING OF ACCESS ROAD OPTIONS

SUMMARY OF RANKING

Siting Option: LF-1E

Rank	Access Road Options	Rationale
1	Option 3	. least number of residences impacted on local road (Low constraint) . no residential strip development on regional access roads (Low constraint)
2	Option 2	. slightly more residences on local access road (Low constraint) . no residential strip development on regional access roads (Low constraint)
3	Option 4	. small number of residences on local access road (Low constraint) . no residential strip development on regional access roads (Low constraint)
4	Option 1	. shorter route than Option 4, but more residences on local access road (Low constraint . no residential strip development on regional access roads (Low constraint)
5	Option 5	. same number of residences on local access roads as Option 1, but substantially longer route . no residential strip development on regional access roads (Low constraint)

Siting Option: LF-2N/PI-1N

To PI-1N

Rank	Access Road Options	Rationale
1	Option 1	. uses local road with significant number of residences (Medium constraint) . shortest distance through residential strip development on regional access roads (Medium constraint)
2	Option 2	. no local road utilized (Low constraint) . significant distance (1.4 km) through heavily populated areas (Milton-pop. 30 000) on regional access road (Medium to high constraint)

TABLE 6.5

(Continued)

PHASE 4A - PRELIMINARY SCREENING OF ACCESS ROAD OPTIONS

SUMMARY OF RANKING

From PI-1N to LF-2N

Rank	Access Road Options	Rationale
1	Option 1	. although it utilizes a local road with significant number of residences (Medium constraint), the route has a limited amount of residential strip development along regional access roads (Omagh-pop. 30) (Medium constraint)
2	Option 2	. no local access roads utilized (Low constraint), and limited distance through residential strip development (0.5 km strip on Steeles Avenue) (Medium constraint), but skirts heavily populated area of Milton (pop. 30 000)

To PI-13N (from north)

Rank	Access Road Options	Rationale
1	Option 2	. quite direct, limited residential impact, avoids Omagh, but utilizes local access road
2	Option 1	. similar to Option 2, but has several residences along local access roads and traverses Omagh (pop. 30)
3	Option 3	. quite direct, uses regional access road, but traverses Drumquin (pop. 25) and other residential strip development

PI-13N to LF-2N

Rank	Access Road Options	Rationale
1	Option 1	. very few residences impacted along local access road (Low constraint), and limited distance through strip residential development along regional access roads (Drumquin-pop. 25) (Medium to low constraint)
2	Option 2	. several more residences impacted along local access road (Medium constraint), but no residential strip development along regional access roads (Low constraint)

TABLE 6.5

(Continued)

PHASE 4A - PRELIMINARY SCREENING OF ACCESS ROAD OPTIONS

SUMMARY OF RANKING

PI-13N to LF-2N (cont'd)

Rank	Access Road Options	Rationale
3	Option 4	. more residences impacted along local access roads than Option 2 (Medium constraint) . limited distance through residential strip development along regional access roads (Omagh pop. 30) (Medium constraint)
4	Option 3	. very few residences impacted along local access road (Low constraint), but substantial residential strip development along regional access roads (High constraint)

Siting Option: LF-4N/PI-1N

To PI-1N - (See Previous Ranking)

To LF-4N

Rank	Access Road Options	Rationale
1.	Option 1	. although local road used with significant number of residences (Medium constraint), has shortest distance through residential strip development on regional access roads (Medium constraint)
2	Option 2	. no local access road (Low constraint) . significant distance (1.4 km) through heavily populated area (Milton pop. 30 000), on regional access road (Medium to high constraint)

Table 6.5 and supporting materials were submitted by the land use consultant to OWMC and utilized in conjunction with the rankings of other site selection consultants to eliminate certain access road options in the preliminary Phase 4A screening process. The remaining access road options were retained for more detailed investigation in the next stage, the comparative evaluation of access road options.

PART 2 - COMPARATIVE EVALUATION OF ACCESS ROAD OPTIONS

This stage involved the selection of a preferred option by comparing the characteristics of the options in a systematic fashion, using more detailed factors and indicators of factors. The purpose of this comparison is to derive the key differences (or similarities) between the options, in order to determine a preferred choice.

The land use consultant's comparative evaluation involved several steps, including the identification of factors and indicators, ranking of the factors and indicators, and ranking the access road options after identifying the key differences between options and making any necessary trade-offs to determine the preferred choice from a land use perspective. These steps are outlined in subsequent sections of this report.

IDENTIFICATION OF FACTORS AND INDICATORS

The access road options which were retained from the preliminary screening process described in Part 1 of this section, along with any additional options identified in Phase 4A, were subject to further, more-detailed assessment in a comparative evaluation. The review of access road options focussed on factors and indicators which would highlight the significant differences (and similarities) between the various options.

The four land use factors and the various indicators of these factors identified at the outset of Phase 4A were utilized as the starting point for the comparative evaluation of access road options.

Following the identification of these factors and indicators, it was necessary to screen them in order to eliminate those factors and/or indicators which did not contribute to the determination of the access road rankings for a variety of reasons. The following Table 6.6 summarizes the factors and indicators which were screened from the land use analysis of the detailed comparative evaluation of road access options, and provides the reasoning for their screening:

TABLE 6.6
PHASE 4A - COMPARATIVE EVALUATION OF ACCESS ROAD OPTIONS
SCREENING OF FACTORS AND INDICATORS

Factor	Indicator	Reason for Screening
1. Existing Land Use	. Industrial facilities	. Very few industrial facilities along any access road option - no impacts identified
	. Land use pattern	. No differences between options
2. Proposed and Planned Land Use	. Approved development proposals . Unapproved development proposal . Local official plan policies . Regional official plan policies	. Very few approved development proposals - limited impact potential . No differences between options indicated by data
3. Land Use Stability	. Land sales . Development proposals . Absentee land ownership . Building quality . Trends in land value	. Land use stability has no relevant application to the analysis of access road options - no impacts identified for any of indicators
4. Provincial Policies and Plans	. Niagara Escarpment Plan . Parkway Belt West Plan	. No access road options were within either provincial planning area - no impacts identified

The remaining factors and indicators were utilized to compare the remaining access road options. These factors and indicators are listed in Table 6.7 below.

TABLE 6.7
PHASE 4A - COMPARATIVE EVALUATION OF ACCESS ROAD OPTIONS
IDENTIFICATION OF FACTORS AND INDICATORS

Factor	Indicator
1. Existing Land Use	. number of residences . commercial facilities
2. Proposed and Planned Land Use	. land use designations . vacant lots of record

Ranking of Factors and Indicators

Having identified the factors and indicators to be used in the comparative evaluation of access road options, the next step was to rank them in order of importance in the evaluation process. The land use consultant determined that both factors, Existing Land Use and Proposed and Planned Land Use, were equally important in terms of defining potential land use impacts along access road corridors. Hence, these factors are ranked equally.

The indicators, however, are not of equal usefulness in defining potential impacts. These indicators were therefore ranked within each factor in order to identify the key differences between road access options. The ranking is detailed in Table 6.8.

TABLE 6.8

PHASE 4A - COMPARATIVE EVALUATION OF ACCESS ROAD OPTIONS
RANKING AND WEIGHTING OF INDICATORS

Rank	Factor Indicator	Weighting	Rationale
	Existing Land Use		
1.	. Number of Residences	10	. Greatest impact from truck traffic anticipated to be on residences along access routes.
2.	. Number of Commercial Facilities	3	. Impacts on commercial uses potentially not as critical as residential impacts.
	Proposed and Planned Use		
1.	. Land use Designations	10	. Key indicator representing future land plans of municipality, though may not occur in short-to mid-term - possibility of long-term mitigation of planned land uses.
2.	. Vacant Lots or Record	2	. Quantitative measure of existing potential for immediate residential development without further planning approvals, but less critical than designations.

These indicators were weighted on a 10-point scale within each factor to reveal the relative importance of each indicator to the analysis. For example, within the Existing Land Use factor, the number of residences is the best indicator of potential impacts from land use perspective since residential uses are considered most sensitive to disruption caused by additional truck traffic along the access roads. This indicator is assigned a weight of 10. The number of commercial facilities indicator is deemed a less important indicator of existing land use impacts. Due to the limited number of such facilities and their relatively low sensitivity to additional truck traffic, this indicator received a weight of 3.

A similar weighting scheme was applied to the indicators for the second factor, Proposed and Planned Land Use, where land use designations were considered much more important than vacant lots of record in determining potential impacts or future land uses.

DATA COLLECTION AND ANALYSIS

A data collection program was initiated for Phase 4A access roads, combining both primary and secondary source information. The data sources were determined by the factors and indicators identified for this phase of the analysis, and the kinds of information available.

Primary data collection involved roadside field investigations of each access road under consideration in Phase 4A. The field work was undertaken by two-person teams which drove the entire route from the exit point from the nearest 400-series highway to the identified entry points of each site. Information was collected on each residential, commercial and industrial use or facility, vacant lots, and other significant land use features (such as signs indicating future development proposals) fronting onto the access road, or within an 800 metre buffer zone abutting each side of the road.

This information was documented in field reconnaissance forms which were completed by the investigators in the field. The forms are on file with the consultant.

Supplementary data were derived from secondary sources such as aerial photography, local and regional official plans, and local municipal land use reports, mapping and comments, in order to provide a comprehensive overview of both existing and future land use conditions. Details on all current development proposals and applications were acquired from each municipality (except Mississauga, as previously noted). The secondary sources also provided a necessary check to confirm individual land uses or overall land use patterns observed in the field. The results of the data collection program are contained in Table F.2 in Appendix F of this report.

In addition to the access routes which emerged from the preliminary screen, the transportation consultant identified three (3) new access routes to be subjected to the detailed comparative evaluation. The data collected for these routes are compiled in Table F.2 of Appendix F, Siting Option Data Profiles - Access Roads Added in Phase 4A.

Analysis of the data involved the following steps. Initially, all major land uses identified in the field were located and mapped on 1:10,000 scale Ontario base maps of the road corridors. In many cases, photographs were taken to provide a permanent record of specific uses.

Upon completion of the field work, property lines for each access road corridor under study area were transferred to the base maps from property assessment maps provided to Ecologistics Limited by the local or regional municipality in which the roads were located. The mapping of property lines provided the land use consultant with a breakdown of residential, commercial and industrial uses by parcel, and allowed vacant lots to be identified.

Mapping of official plan designations was derived from local and regional municipal documents as in Phase 3B. Once again, unapproved primary or secondary official plans were utilized where there was strong indication of approval by the local municipality.

With regard to vacant lots of record, the identification of vacant properties on the 1:10,000 base maps was supplemented by a review of municipal building standards relative to minimum lot sizes to determine which parcels constituted legal building lots. Those which met or surpassed the minimum lot requirements were deemed to be vacant lots of record with inherent building rights (subject to by-law set back and use compliance). These lots represent residential infilling potential without requiring further planning approvals.

The comparative evaluation process enabled the land use consultant to identify the major differences between access road options to each site and, hence, permitted the ranking of the various options from a land use impact perspective.

RANKING OF ACCESS ROAD OPTIONS

The final step in the comparative evaluation of access road options was the ranking of the options based on the foregoing analysis. The land use consultant compared the road option to each siting combination on the basis of the four indicators previously identified to select a preferred access road option from a land use perspective. The results of the ranking, and the reasons for such ranking, are presented in Table 6.9, Comparative Evaluation of Access Road Options - Summary of Ranking. The options are listed in Table F.3 in Appendix F, and illustrated in Figures 6.1 to 6.11.

TABLE 6.9
PHASE 4A - COMPARATIVE EVALUATION OF ACCESS ROAD OPTIONS
SUMMARY OF RANKING

Rank	Access Road Options	Rationale for Ranking	Magnitude and Significance of Differences Between Ranking
To LF-3C			
1.	Option 2	. High number of residences and commercial facilities, and vacant lots imported.	. Both Options have high residence and commercial counts and vacant lots - very little relative difference. . Both ranked equally.
1.	Option 1	. Slightly more residences and commercial facilities impacted, but slightly fewer vacant lots of record.	
LF-1E			
1.	Options 2, 5	. Fewest number of residences enroute. . Very few commercial facilities . No residential land use concentrations or designations. . Moderate number of vacant lots of record - limited potential for additional residential development.	. Options 1, 2, 3, 5 and 6 are very similar with slight variation in residence counts. . Option 4 is significantly worse due to higher residential count and vacant lots of record. . If all other options were rated as 'Low' constraints (i.e., 1 on scale of 1 to 5), then Option 4 would rate a 'Moderately Low' (or 2 on scale of 1 to 5).

TABLE 6.9
(Continued)
PHASE 4A - COMPARATIVE EVALUATION OF ACCESS ROAD OPTIONS
SUMMARY OF RANKING

Rank	Access Road Options	Rationale for Ranking	Magnitude and Significance of Differences Between Ranking
LF-1E (Continued)			
2.	Options 1, 6	. Very similar to Option 2, except slightly more residences enroute. . Slightly fewer vacant lots of record.	
3.	Option 3*	. Very similar to Option 1, except slightly more residences enroute, but slightly fewer vacant lots of record.	
4.	Option 4*	. Highest number of residences enroute. . Slightly higher number of commercial facilities. . Highest number of vacant lots of record some potential for additional residential development.	

* Denote Options eliminated after boundary refinement exercise.

Rank	Access Road Options	Rationale for Ranking	Magnitude and Significance of Differences Between Ranking
PI-1N To LF-4N			
1.	Option 1	. Fewer residences and commercial uses, and shorter access route than Option 2.	. Option 1 is considerably better than Option 2 in terms of relative impacts, but neither has severe impact potential.
2.	Option 2	. Considerably more residences and commercial uses than Option 1.	. Option 1 rated 'Low' (1), Option 2 rated 'Moderately Low' (2).

TABLE 6.9
(Continued)
PHASE 4A - COMPARATIVE EVALUATION OF ACCESS ROAD OPTIONS
SUMMARY OF RANKING

Rank	Access Road Options	Rationale for Ranking	Magnitude and Significance of Differences Between Ranking
To PI-27E			
1.	Options 1, 2	· Both options have same number of residential and commercial uses, vacant lots and land use designations enroute. · No difference in land use impacts.	· No difference in ranking.
PI-27E To LF-1E			
1.	Options 2, 5	· Fewest number of residences enroute. · No commercial facilities impacted. · No residential land use concentrations or designations. · Fewest number of vacant lots of record.	· Options 1, 2, 3, 5 and 6 are very similar in terms of impacts on adjacent uses (especially number of residences and commercial facilities) · These options would be rated as "Low" constraints (or 1 on a scale of 1 to 5). · Option 4 is significantly worse due to higher residence count and number of vacant lots of record. · This option would rate a "moderately-low" constraint (2 on scale of 1 to 5).
2.	Options 1, 6	· Very similar to Option 2 but slightly more residences and commercial facilities impacted. · Slightly higher number of vacant lots of record.	

TABLE 6.9
(Continued)
PHASE 4A - COMPARATIVE EVALUATION OF ACCESS ROAD OPTIONS
SUMMARY OF RANKING

Rank	Access Road Options	Rationale for Ranking	Magnitude and Significance of Differences Between Ranking
PI-27E To LF-1E			
3.	Option 3*	. Very similar to Option 1, but slightly more residences and commercial facilities impacted. . Slightly lower number of vacant lots of record than Option 1.	
4.	Option 4*	. Highest number of residences and commercial facilities impacted. . Highest number of vacant lots of record some potential for additional residential development.	

* Denote Options eliminated after boundary refinement exercise.

These tables and rankings were combined by the Site Selection Team with those produced by the other consultants to OWMC and assisted in the determination of preferred access road options in the site selection process.

7. LOCATION OF PHYSICAL/CHEMICAL TREATMENT PLANT FOR PARTIALLY INTEGRATED SITING OPTIONS

INTRODUCTION

Partially integrated siting options are those which require two sites to accomodate the three major facilities (physical/chemical treatment plant, incinerator and engineered landfill). With partially integrated siting options, there is a choice of locating the physical/chemical treatment plant with the incinerator or with the engineered landfill. This section of the report discusses the potential land use impacts of the location of the physical/chemical treatment plant with respect to the three partially integrated siting options under consideration. These siting options are:

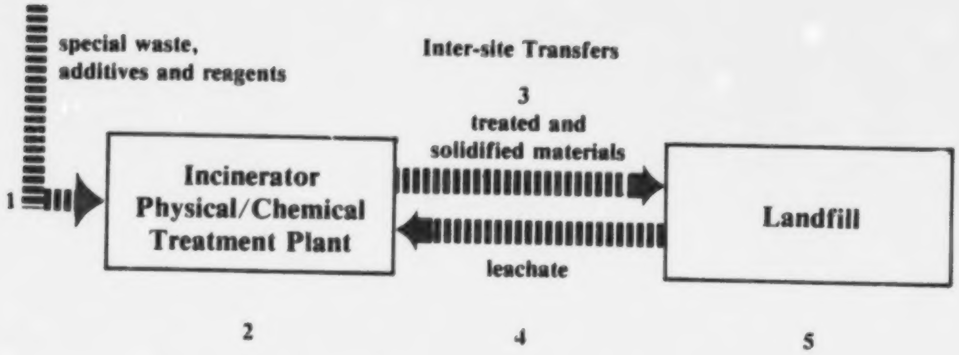
- LF-4N/PI-1N
- LF-4N/PI-13N
- LF-1E/PI-27E

For each of these three siting combinations, two (2) options were identified for the distribution of the facility components on each site. Option 1 consists of placing the physical/chemical treatment plant with the incinerator on one site, and the landfill facility on a separate site, while Option 2 located the physical/chemical treatment plant with the landfill facility, and the incinerator on a separate site. Figure 7.1 details the schematic configurations of the partially integrated siting options.

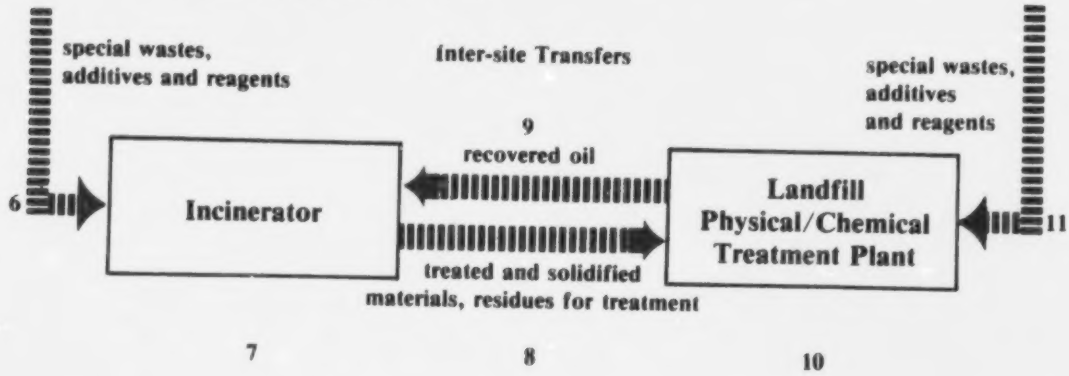
FIGURE 7.1

SCHEMATIC OF PARTIALLY INTEGRATED SITING OPTIONS

OPTION 1: The physical/chemical treatment plant with the incinerator and the landfill facility on a separate site.


special waste,
additives and reagents
Inter-site Transfers
3
treated and
solidified materials
1
Incinerator
Physical/Chemical
Treatment Plant
Landfill
leachate
2
4
5

OPTION 2: The physical/chemical treatment plant with the landfill facility and the incinerator on a separate site.


special wastes,
additives and reagents
Inter-site Transfers
special wastes,
additives
and reagents
9
recovered oil
6
Incinerator
Landfill
Physical/Chemical
Treatment Plant
11
treated and solidified
materials, residues for treatment
7
8
10

LEGEND

1 = access route for transporting - special waste, additives and reagents to the physical/chemical treatment plant
2 = site of the incinerator and the physical/chemical treatment plant
3 = inter-site transfer route for the treated and solidified materials from the incinerator and physical/chemical treatment plant to the landfill facility
4 = inter-site transfer of leachates from the landfill to the incinerator and physical/chemical treatment plant
5 = site of the landfill facility
6 = access route for transporting special wastes and additives and reagents to the incinerator
7 = incinerator site
8 = inter-site transfer route for transporting treated and solidified materials and residues for treatment from the incinerator to the landfill facility and physical/chemical treatment plant
9 = transfer route for transporting recovered oil from the physical/chemical treatment plant to the incinerator
10 = site of the physical/chemical treatment plant and the landfill facility
11 = access route for transporting special waste, additives and reagents to the physical/chemical treatment plant.

The purpose of the location of the physical/chemical treatment plant exercise is to identify the best facility distribution scheme for each of the partially integrated siting options.

The land use consultant provided technical data input and rankings to the Site Selection Team and participated in the selection of the preferred location of the physical/chemical treatment plant for the three partially integrated siting options.

IDENTIFICATION OF FACTORS AND INDICATORS

The evaluation of the location of the physical/chemical treatment plant was intended to highlight the key differences in impacts resulting from placement of the physical/chemical treatment plant and incinerator together, or the physical/chemical treatment plant and landfill together on one site. In all three of the partially integrated siting options, the location of the incinerator is given. Similarly, the landfill location is fixed in each case.

To do so, the land use consultant reviewed the characteristics and assumptions of the facilities and their operations in order to determine the types of land use impacts that could be anticipated. The relevant facility characteristics assumptions from a land use perspective are contained in Chapter 1 of this report. The key characteristics as applicable to the location of the physical/chemical treatment plant are highlighted in this section.

The most significant physical attribute of both the physical/chemical treatment plant and the incinerator is the distinctly industrial appearance and operating procedure of these facilities. The engineered landfill facility, with its low concentration of buildings and low visual profile is considerably less industrial in nature and would appear to be better suited to a rural location than the other two facilities. Preference would be given to the partially integrated siting combination which maximizes land use compatibility of the industrial facilities, while minimizing the negative impacts on incompatible land uses in the vicinity of the sites or along access routes leading to the sites.

The land use consultant concluded that impacts on land uses near the candidate site are most severe in the case of the incinerator. Impacts associated with the physical/chemical treatment plant are considered greater than for the engineered landfill, but less than those associated with the incinerator. As such, it was concluded that the addition of the physical/chemical treatment plant to the incinerator site would have minimal incremental increase in land use impacts to the surrounding lands. This conclusion is based on the assumption that the site would already be committed to a heavy industrial use and that additional buildings in the complex would produce no significant differences in terms of land use compatibility beyond the additional truck traffic generated by the facility. The truck volume impacts would be assessed relative to the access road comparisons in this evaluation.

Conversely, the introduction of an industrial physical/chemical treatment plant onto a largely rural landfill site would have obvious implications to surrounding land uses and those along access roads. The factors utilized in this assessment took these impacts into account.

Based on these initial assumptions and conclusions the land use consultant identified the factors and indicators outlined in Table 7.1 as the basis of determining the preferred location of the physical/chemical treatment plant for partially integrated siting options.

TABLE 7.1
PHASE 4A - LOCATION OF PHYSICAL/CHEMICAL TREATMENT PLANT FOR PARTIALLY INTEGRATED SITING OPTIONS
IDENTIFICATION OF FACTORS AND INDICATORS

Factor/Study Area		Indicators	Rationale
. Existing Land Use	- site vicinity (to 1 000 m from site)	. Number of residences . Industrial commercial facilities.	. Most directly and significantly impacted land uses.
. Transportation Impact Index/	- access roads	. Number of residences, commercial facilities and AADT.*	. Combine sensitive land uses with magnitude of impact (traffic volume).
. Proposed and Planned Land Use	- site	. Land use designations.	. Indicates future land use capability.
. Proposed and Planned land use	- site vicinity (to 1 000 m from site)	. Land use designations.	. Indicates future land use capability.

The Existing Land Use and Proposed and Planned Land Use factors are derived from the initial list of factors identified at the outset of Phase 4A. These factors assist in describing existing and future land use status immediately surrounding (or in one case, on-site) the partially integrated sites. The 1 000 metre study zone was selected as this was the area subject to the greatest land use impacts due to proximity to the candidate sites.

The fourth factor, Transportation Impact Index, was developed by the transportation consultant to OWMC, M.M. Dillon Limited, and was used by the land use consultant to account for variations in truck traffic along the access roads to the sites under the two facility location scenarios. Reference should be made to the M.M. Dillon Transportation and Site Selection reports on the use of this Index. The objective of this factor was to determine if the location of the physical/chemical treatment plant either with the incinerator or with the landfill would result in a difference in land use impacts to receptors along the access roads. Receptors, in this case, were defined as existing residences and commercial facilities within an 800 m study area of the access roads. The change in Annual Average Daily Traffic (AADT) as a result of OWMC -generated truck traffic was provided by M.M. Dillon Limited and multiplied by the number of receptors to determine the impact index.

---

*AADT refers to the Annual Average Daily Trips along a roadway.

Two indicators were identified for the Existing Land Use factor. These are number of residences and industrial and commercial facilities. The indicator existing land use pattern was screened from the analysis as there was no difference between options.

The Proposed and Planned Land Use factor had only one indicator identified - land use designations. The remaining indicators were screened due to the absence of differences between options. The key land use designations were general or heavy industrial lands, which would provide the greatest degree of compatibility, and residential designations, which would be least compatible.

RANKING OF FACTORS AND INDICATORS

In order to determine the significance of the results of the identification of factors and indicators, a ranking of these factors and indicators was undertaken. The following Table 7.2 summarizes this ranking and provides the reasoning therefore.

TABLE 7.2

PHASE 4A - LOCATION OF PHYSICAL/CHEMICAL PLANT FOR PARTIALLY INTEGRATED SITING OPTIONS

SUMMARY OF RANKING OF FACTORS AND INDICATORS

Rank	Factor	Indicator	Rationale
1.	Existing Land Use - site vicinity	. number of residences	. Most sensitive existing land-use - preference to locating physical/chemical plant near fewest residences.
		. commercial facilities	. Considered less sensitive than residential uses, but potential for adverse impacts.
2.	Proposed and Planned Land Use - site	. land use designations	. key land use consideration is compatibility of physical/ chemical treatment plant with industrial designations and incompatibility with residential and agricultural designations.
3.	Proposed and Planned Land Use - site vicinity	. land use designations	. compatibility of OWMC facilities with surrounding land use designations an important consideration.
4.	Transportation Impact Index	. AADT . number of residences . commercial facilities	. Impacts along access roads due to increased truck traffic considered less critical than facility impacts on land uses near industrial facility components.

DATA COLLECTION AND ANALYSIS

The data utilized in this component of the refinement of siting options were collected in earlier stages of Phase 4A. The Transportation Impact Index was obtained from M.M. Dillon Limited-Transportation. Relevant data were tabulated in data matrices which are appended in Table G.1 in Appendix G.

Existing land uses (number of residences and industrial and commercial facilities) were collected for a study area comprising part of the site vicinity to a distance of 1 000 metres from the boundaries of the site.

Proposed and planned land uses (land use designations) were collected for two study areas, the site and the site vicinity. The site study area enabled the land use consultant to determine compatibility of the facility arrangements with the land use designation on site. The physical/chemical treatment plant was deemed by the consultant to most resemble an industrial plant in appearance and operation, hence the highest degree of compatibility will be found with general or heavy industrial uses. Compatibility will be somewhat less with all other land uses under consideration by the land use consultant, including prestige industrial, commercial, rural/agricultural or residential designations.

Similarly, the land use designations in the site vicinity were significant in this analysis, with compatibility also being highest for industrial designations and lowest for residential uses.

It was generally determined that the negative impacts resulting from the industrial components of the three OWMC facilities (the physical/chemical treatment plant and the incinerator) would be reduced by locating them together on one site and keeping the engineered landfill separate. By combining the industrial components on one site, the same number of sensitive uses are affected near that site, but none are affected adjacent to the landfill site.

The transportation index factor measured the impacts of additional truck traffic generated by the OWMC facilities against the number of receptors (residences and commercial uses) located in the access road study area, a zone of 800 m abutting each side of the access roads leading to the siting options. The index was derived by multiplying the change in Annual Average Daily Traffic (AADT) due to the introduction of OWMC related truck traffic, by the combined total number of residences and commercial facilities along the route. The change in AADT is expressed as a ratio against the existing AADT. Because the truck volumes varied according to the facility configuration, differences were readily noted.

RANKING OF LOCATION OF PHYSICAL/CHEMICAL TREATMENT PLANT OPTIONS

Upon completion of the foregoing analysis, the location of the physical/chemical treatment plant options were ranked in order of preference by the land use consultant. The ranking is summarized in Table 7.3.

TABLE 7.3

PHASE 4A - LOCATION OF PHYSICAL/CHEMICAL TREATMENT PLANT FOR PARTIALLY INTEGRATED SITING OPTIONS - SUMMARY OF RANKING OF OPTIONS

	Factor	Weight	Preferred Option			Rationale
			Options 1	2	No Preference 3	
Siting Option LF-4N/PI-1N						
1.	Existing Land Use - site vicinity	3	X			. Considerably fewer residences (42) impacted in 1 000 m study area.
2.	Proposed & Planned land Use - site	2			X	. Both sites have incompatible designations (agricultural, with sanitary landfill on LF-4N).
3.	Proposed & Planned Land Use - site vicinity	2			X	. No difference in designations in site vicinity.
4.	Transportation Impact Index - access roads	1	X			. Slightly lower impact index.
		Score	4	0	-	Overall: Option 1 clearly preferred, particularly in regard to impacts on existing residences in the site vicinity.

TABLE 7.3
(Continued)
PHASE 4A - LOCATION OF PHYSICAL/CHEMICAL TREATMENT PLANT FOR PARTIALLY INTEGRATED SITING OPTIONS - SUMMARY OF RANKING OF OPTIONS

Factor	Weight	Preferred Option			Rationale
		Options 1	Options 2	No Preference 3	
Siting Option - LF-4N/PI-13N					
1. Existing Land Use - site vicinity	3	X			. Considerably fewer residences (26) impacted in 1 000 m study area.
2. Proposed & Planned Land Use - site	2			X	. Both sites have incompatible designations (agricultural).
3. Proposed & Planned Land Use - site vicinity	2			X	. Both agricultural - a residential cluster near PI-13N already impacted by incinerator - no additional impacts assumed.
4. Transportation Impact Index - access roads	1		X		. Slightly lower impact index for Option 2 (1.3% lower).
	Score	3	1	-	Overall: Preference for Option 1 due to significantly fewer residences impacted within 1 000 m of industrial facilities - offsets slight disadvantages with respect to higher transportation impact index.
Siting Option LF-1E/PI-27E					
1. Existing Land Use - site vicinity	3	X			. Substantially fewer residences (38) impacted by industrial facilities in 1 000 m zone.
2. Proposed & Planned Land Use - site	2	X			. Facilities to be located on compatible industrially designated site (PI-27E).

TABLE 7.3
(Continued)
PHASE 4A - LOCATION OF PHYSICAL/CHEMICAL TREATMENT PLANT FOR PARTIALLY INTEGRATED SITING OPTIONS - SUMMARY OF RANKING OF OPTIONS

	Factor	Weight	Preferred Option			Rationale
			Options		No Preference	
			1	2	3	
3.	Proposed & Planned Land Use - site vicinity	2	X			. Substantially more compatible industrial lands near PI-27E than LF-1E.
4.	Transportation Impact Index - access roads	1	X			. Lower impact index for Option 1 by about 12%.
		Score	8	0	-	Overall: Option 1 clearly preferred due to industrial compatibility and minimization of impacts on existing residences within 1 000 m and along access roads.

These rankings and supporting rationale were provided to the Site Selection Team to be integrated with the rankings of all other consultants in order to determine the preferred facility siting combinations on each of the three partially integrated siting options. The land use consultant participated in the process of determining the preferred location of the physical/chemical treatment plant. The Site Selection Team recommended that the physical/chemical treatment plant be located with the incinerator for all three partially integrated siting options. Reasons for these decisions are contained in the Site Selection Process. Phase 4A: Selection of a Preferred Site(s) - Site Selection (1985) report prepared by M.M. Dillon. At the conclusion of this stage of the site Selection process, the six remaining siting options were refined to a format suitable for detailed comparative evaluation in order to determine the overall preferred siting option.

8. COMPARISON OF SITING OPTIONS

INTRODUCTION

This chapter describes the process which was used to compare the siting options in order to produce a final ranking of siting options from a land use perspective. Various components of this process were undertaken independently by the land use consultants; others were undertaken jointly by all members of the site selection team. This chapter documents only those aspects of the comparison of siting options which were undertaken independently by the land use consultants.

The object of this analysis is to produce a ranking of the six siting options which have been refined and which remain from the previous step, refinement of siting options.

Before this analysis was undertaken, however, each consultant examined new data collected during Phase 4A to determine if any of the remaining siting options could not meet basic levels of acceptability, irrespective of its relative suitability when compared with other siting options using all other factors. This exercise was conducted by each consultant and is known as the Basic Acceptability Analysis. The land use consultant's assessment is documented in the following section of this chapter.

Following this analysis, two separate streams of comparative evaluation activities were undertaken by the land use consultant. When each was completed the results were synthesized in a summary analysis and ranking of site options. The two streams were therefore used to ensure the soundness of the analysis and the final ranking of siting options.

The first analysis technique used was quantitiative in nature and is known as Factor/Indicator Aggregation. The basis of this approach is the direct conversion of factor and indicator data into units of siting suitability. Indicator data is converted into levels of constraint, while factors are converted into suitability ratings. The data utilized in this analysis are detailed in Table H.8 of Appendix H, Comparative Evaluation of Siting Options - Data Matrices.

Suitability ratings for factors were then aggregated for the Land Use Impact factor grouping through the assignment of weights which reflect the relative importance of each factor. The result was a Land Use Impact Suitability Rating, from which a preliminary ranking of siting options was derived.

The second analysis technique used was qualitative in nature and is known as the Review of Issues and Trade-offs. During the course of the site selection process, issues and tradeoffs associated with a single siting option (issue) or the comparison between a pair of siting options (trade-off) were identified. By reviewing each of the major land use issues and tradeoffs during the comparison of siting option pairs, preferences between siting option pairs emerged. These preferences between pairs, when considered together, also resulted in a ranking of siting options, which was used to confirm the Preliminary Ranking. This analysis is described in the section of this report entitled Review of Major Issues and Trade-offs.

The synthesis of the results of these two analysis is described in the section entitled Final Ranking of Siting Options.

The final ranking of the six siting options from a land use perspective was based upon the indicator and factor aggregation and review of the major issues and trade-offs derived from the comparison of siting options pairs. Both of these analysis techniques permitted a close examination of the differences between the sites from a land use perspective.

The aggregation of indicators/factors exercise yielded a systematic set of suitability ratings for each factor by study area, and permitted weights to be assigned to each indicator and factor. It also permitted each data input to be used in a comprehensive assessment of each siting option.

In addition, the comparison of siting option pairs offers the opportunity to describe the major issues and trade-offs inherent in the selection of one siting option over another and to reveal the logic used in reaching a decision on a preferred siting option. The two approaches were complementary and enabled the land use consultant to determine the final ranking of siting options.

Upon completion of the final ranking of siting options, it was necessary to consider whether three of the assumptions made concerning facility design, if altered, may have any bearing upon the ranking of siting options. The first assumption concerns the use of rail as a means of transporting additives and reagents to the site. During Phase 4A, although rail access alternatives were examined, it was assumed for the purpose of comparison of siting options that only road access would be utilized. Consideration of rail access was only on the basis that it be viewed as a mitigation measure, through a reduction in truck traffic.

Therefore, a sensitivity analysis was conducted to determine if the use of rail access might change the ranking of siting options.

Similarly, it was assumed during Phase 4A that total solidification of treated residues from the physical/chemical treatment plant would occur, prior to placement in the engineered landfill. However, OWMC is examining the possibility that partial solidification will occur. Also several options exist for the disposal of the resulting liquid effluent, one of which is evaporation. Therefore, a sensitivity analysis was also conducted to determine if the decision to proceed with evaporation of liquid affluent would alter the ranking of siting options.

The third assumption concerns the site boundaries used for LF-3C and LF-1E. If partial solidification is selected, it may be necessary to revise the boundaries for candidate sites LF-1E and LF-3C. Therefore a sensitivity analysis has been undertaken to determine whether the revised site boundaries would affect the ranking of siting options.

BASIC ACCEPTABILITY ANALYSIS

A basic acceptability analysis was undertaken by each member of the Site Selection Team, the focus of which was to identify clear thresholds which, if surpassed, would contradict fundamental siting requirements and site selection principles. It was this analysis which resulted in the exclusion of candidate site LF-2N from further consideration due to hydrogeologic conditions. Refer to Site Selection Process. Phase 4A: Interim Site Selection Report - Candidate Site LF-2N, M.M. Dillon Limited.

From a land use viewpoint, no instances were identified where the basic acceptability of a siting option is not being met. No direct conflicts were identified with the requirements of a federal or provincial agency in the land use planning field. In addition, most of the decisions taken in Phase 3B with respect to the elimination of lands considered unsuitable for facility siting ensured that sensitive land uses, such as residential, were sufficiently removed from potential sites.

It should be noted that for several siting options, facility siting would not conform to municipal official plans and zoning by-laws. While this became a significant consideration in the comparative analysis, it was determined not to represent a matter which contravenes basic acceptability. This conclusion was based upon the fact that no planning document could contemplate such a unique land use. In addition, while it is desirable that the facilities conform to local planning policies and zoning by-laws, where possible, OWMC's status as a Crown Corporation does not legally require it to do so.

AGGREGATION OF FACTORS AND INDICATORS

Within factors, it was important to determine the relative importance of indicators. This was done, based upon the judgment of the land use consultant, through the ranking of, and assignment of weights to, the indicators. In addition, the indicator data itself was scaled, or grouped into various levels of constraint (i.e. low, medium or high constraint). Subsequently, levels of constraint for each indicator by siting option were combined with the weight of each indicator in order to derive a factor suitability rating, a basis of comparison between siting options.

The aggregation of indicators stage, therefore, consisted of the following steps which are described below. They are:

- screening of indicators
- modifications to factors and indicators
- ranking and weighting of indicators
- scaling of data
- assignment of suitability levels

SCREENING OF INDICATORS

The complete list of factors and indicators described in Chapter 2 of this report were utilized for the detailed comparative evaluation. Due to negligible potential impacts, or insignificant data differences between siting options, several indicators were screened at the outset. Table H.1 in Appendix H presents the indicators screened from use for each of the four study areas, along with the reasons for their exclusion from the comparative evaluation process.

MODIFICATIONS TO FACTORS AND INDICATORS

During the course of the Phase 4A analysis, and prior to commencing the factor/indicator aggregation process, the land use consultant determined that modifications were required to the original list of factors and indicators identified for the land use evaluation. Specifically, the modifications involved only one factor, Existing Land Use, and in particular, the indicator industrial and commercial facilities.

This indicator initially combined both uses. It became evident, however, that impacts varied for each of these land use components, depending on the area of analysis. However, due to the distinct nature of each use, it was preferrable to split the two land use types to form two indicators, commercial facilities and industrial facilities, from the single indicator.

RANKING AND WEIGHTING OF INDICATORS

The remaining indicators for each factor were then ranked from highest to lowest, based upon such considerations as the severity of potential impacts, the frequency of impact and the reliability of data. The ranking of indicators is documented in Table H.2 in Appendix H.

It is important to note that the indicators are both ranked in order of significance, and numerically weighted to show the relative difference in importance between the indicators. The weighting of indicators is also documented in detail in Appendix H - Table H.2. The weights were later used to multiply the suitability ratings assigned to the data results for each siting option in order to derive a weighted factor suitability rating.

To summarize this process, all indicators within factors were reviewed, and generally one indicator was determined to be the most important indicator of a factor. This was generally consistent for each factor/study area combination. For example, for the Existing Land Use factor, the most important indicator was determined to be the number of residences. This was, therefore, given a weight of 10, in comparison to weights of 3, 2 and 1 for the remaining indicators.

This weighting reflects the consultant's interpretation of the magnitude of difference with respect to the importance of each indiactor. This was decided for several reasons; residences in the three study areas for which this indicator was used (site, site vicinity, access roads) will be the most sensitive land use, this indicator represents a very precise measure of anticipated impacts, and due to the high incidence of residences compared to the number of commercial and industrial uses encountered.

For the Proposed and Planned Land Use factor, the most important indicator was land use designations. The primary reason for this ranking was that it represents the intentions of the municipality with respect to future land uses, which must be respected by private land owners. This indicator was therefore assigned a weight of 10, while all remaining indicators were assigned a weight of 2 or 1.

For the Land Use Stability factor, the most important indicator was determined to be absentee land ownership. This was determined for several reasons; this indicator is the best measure of land owner tenure and the potential for land speculation and/or land holdings by development companies, also the data which was collected showed the most significant difference between siting options in the three geographic areas (Milton, West Lincoln, Niagara Falls).

For the Provincial Policies and Plans factor, no difference in importance was determined for the two indicators, Parkway Belt West Plan and Niagara Escarpment Plan. Both plans represent the policies and intentions of the provincial government and generally their relevance to the affected siting options is the same.

SCALING OF DATA

The next step was to scale the data collected in the field or assembled from secondary sources for each indicator. The purpose of this exercise was to disaggregate the data into smaller groups based on up to five levels of constraint (low, moderately low, medium, moderately high and high) to facilitate the assignment of suitability ratings.

This exercise was undertaken for each indicator/study area in the following manner. First, data were collected for each of the six siting options and organized in data matrices, and the range of data observed. Several considerations then contributed to how the data were scaled. For example, if an indicator was weighted highly, such as number of residences, a 5 point scaling system was used in order to reveal all significant differences in data. In this instance, a wide range of data were also observed, therefore reinforcing the decision to use a 5 point scale.

In the assignment of constraint levels, the intention was to find clusters of data across the range, and to distribute data into constraint levels based upon logical gaps in data. For less important indicators, and for those which had a limited range of data, 3 point scaling systems were used. The product of this step, therefore, was the assignment of levels of constraint to each siting option indicator data.

The scaling of indicators for each study area is documented in Table H.3 in Appendix H.

ASSIGNMENT OF SUITABILITY RATINGS

Following the scaling of indicators was the assignment of constraint levels (to indicators) and suitability ratings (to factors) for the six siting options. This step involved assigning one of the five levels of constraint (L, L-M, M, M-H, H) to each indicator in each study area, based on the scaled results of the data that were collected.

For example, if the number of residences counted on site was 10, this was scaled in Table H.4 as a "medium" constraint (8-11 residences) and assigned a constraint level of "M" (Medium) in Table H.4.1 in Appendix H. Constraint levels for site indicators are contained in H.4.1; for site vicinity indicators in Table H.4.2; community and regional area in Table H.4.3; and access roads in Table H.4.4.

Upon completion of the assignment of constraint levels to indicators, all of the indicators for each land use factor were aggregated to derive a single suitability rating for each factor. To derive this single rating, the indicator constraint levels were placed into one of the seven numeric suitability ratings, ranging from +1 (absence of constraint or a siting opportunity, such as heavy industrial designation on site) to -5 (highest level of constraint).

Table H.5 in Appendix H presents the matching of constraint levels to suitability ratings, and the rationale for the matching, leading to the aggregation of indicators.

The constraint levels corresponding to the suitability ratings are as follows:

Constraint Level		Suitability Rating
Low	=	+1 or -1
Moderately Low	=	-2
Medium	=	-3
Moderately High	=	-4
High	=	-5

It is noted that the low constraint level can represent a siting opportunity (+1) in the event of the absence of constraint, or a siting constraint (-1) in the event that some degree of constraint is present. The remaining levels correspond on a one-to-one basis in order to decreasing suitability for the siting of OWMC facilities.

Upon completion of the assignment of suitability ratings, a series of calculations were made to aggregate the indicators. These calculations involved multiplying the numeric suitability ratings assigned to each indicator for each siting option, by the weight assigned to that indicator. The weighted suitability ratings were then totalled and divided by the total of the weights in order to derive a factor suitability rating. This factor suitability rating represents the aggregation of the suitability ratings for all of the indicators of a particular factor.

Table H.6 in Appendix H presents a summary of the suitability ratings by factor for each of the six (6) siting options. The table also provides a rationale for the factor suitability ratings, identifying the key trade-offs within indicators of the factor which contributed to the overall suitability ratings.

AGGREGATION OF FACTORS

The purpose of the aggregation of factors exercise was to combine the factor suitability ratings in order to produce an overall suitability rating for the Land Use Impact factor grouping.

In order to further combine the factor suitability ratings to produce a comprehensive Land Use Impacts rating for each siting option, it was necessary to assign weights to each factor. These weights were derived in accordance with the land use consultant's judgment of the significance of impacts associated with each of the land use factors. Table H.7 in Appendix H details the ranking and weighting of the factors utilized in the land use site evaluation process.

It was determined that the most significant land use impact potential was associated with both existing and future land use. This opinion was based on the premise that, prior to locating OWMC's waste treatment facilities on a certain site, consideration must be given not only to the existing land use pattern around the site, but also to the planned and proposed development pattern in that area. Only in this way can proper consideration be given to one of the site selection objectives, which is to minimize conflict with Federal, Provincial and Municipal policies, plans and programs. The primary consideration in this case is compatibility with municipal official plans.

Based on the foregoing, the factors Existing Land Use and Proposed and Planned Land Use were both ranked and weighted as high constraints. The factor Land Use Stability was ranked a medium constraint, due to its role as a supporting factor to Proposed and Planned Land Use, and the lesser degree of confidence in the data.

The fourth land use factor, Provincial Policies and Plans was ranked as the least significant factor (low constraint). This factor affects only the Milton siting options, and for these sites the impacts are considered relatively minor. In the case of candidate site PI-13N, the presence of provincial planning areas in the site vicinity provided a siting opportunity because new provincial highways were proposed to be constructed, potentially improving access opportunities.

The product of multiplying the factor suitability rating by the weight assigned to each factor, divided by the sum of the weights, produced the overall suitability ratings for the Land Use Impact Factor grouping. The results of the factor aggregation process are contained in Table 8.2, Suitability Ratings by Factor, and Table 8.3, Suitability Ratings by Study Area.

The results of the factor aggregation process indicates the following preliminary ranking of siting options:

TABLE 8.1
PRELIMINARY RANKING OF SITING OPTIONS

Preferred Siting Option	LF-1E/PI-27E
	LF-1E
to	LF-9C
	LF-3C
	LF-4N/PI-1N
Least Preferred Siting Option	LF-4N/PI-13N

The magnitude of difference in preference between these siting options is reflected in the overall Suitability Ratings in Table 8.2. LF-1E/PI-27E is clearly preferred over all siting options, LF-4N/PI-13N is significantly less preferred than all other options, and the differences between the remaining siting options are less pronounced.

The weighted suitability ratings and related land use analyses were provided to the site selection team as input to the comparison of siting option pairs.

This analysis was then tested through the second analysis technique, Review of Major Issues and Trade-offs.

TABLE 8.2

SUITABILITY RATINGS BY FACTOR

Factor/Study Area	Weight	SITING OPTIONS					
		LF-3C	LF-9C	LF-1E	LF-4N/1N	LF-4N/13N	LF-1E/27E
1. Existing Land Use							
. Site Area	20.0	-1.6	-1.0	-4.0	-2.3	-2.3	-4.3
. Site Vicinity	30.0	-2.0	-1.9	-3.4	-3.1	-4.7	-3.3
. Community & Regional Area	10.0	-2.0	-2.0	-1.0	-3.0	-3.0	-2.0
. Access Road	10.0	-5.0	-5.0	-1.0	-3.4	-3.4	-1.0
Factor Rating		-2.31	-2.10	-2.89	-2.90	-3.59	-3.07
2. Proposed & Planned Land Use							
. Site Area	25.0	-4.3	-4.3	-4.1	-4.0	-3.8	-2.1
. Site Vicinity	25.0	-3.1	-3.1	-3.0	-3.4	-3.4	-1.8
. Community & Regional Area	10.0	-2.3	-2.3	-1.6	-3.0	-3.0	-1.6
. Access Road	10.0	-4.3	-4.3	-0.5	-4.3	-4.3	-0.5
Factor Rating		-3.59	-3.59	-2.84	-3.69	-3.61	-1.69
3. Land Use Stability							
. Site Area	2.0	-4.4	-3.2	-3.6	-2.6	-1.8	-2.2
. Site Vicinity	5.0	-4.8	-4.8	-3.5	-1.8	-1.3	-3.5
Factor Rating		-4.69	-4.34	-3.53	-2.03	-1.44	-3.13
4. Provincial Policies & Plans							
. Site Vicinity	2.0	-	-	-	-3.0	-2.0	-
. Community & Regional Area	1.0	-	-	-	-4.0	-3.0	-
Factor Rating		0.00	0.00	0.00	-3.33	-2.33	0.00
OVERALL RATING		-3.03	-2.91	-2.89	-3.23	-3.47	-2.42

TABLE 8.3

SUITABILITY RATINGS BY STUDY AREA

Study Area	Weight	SITING OPTIONS					
		LF-3C	LF-9C	LF-1E	LF-4N/1N	LF-4N/13N	LF-1E/27E
1. Site Area							
· Existing Land Use	20.0	-1.6	-1.0	-4.0	-2.3	-2.3	-4.3
· Proposed & Planned Land Use	25.0	-4.3	-4.3	-4.1	-4.0	-3.8	-2.1
· Land Use Stability	2.0	-4.4	-3.2	-3.6	-2.6	-1.8	-2.2
Study Area Rating		-3.16	-2.85	-4.04	-3.22	-3.08	-3.04
2. Site Vicinity							
· Existing Land Use	30.0	-2.0	-1.9	-3.4	-3.1	-4.7	-3.3
· Proposed & Planned Land Use	25.0	-3.1	-3.1	-3.0	-3.4	-3.4	-1.8
· Land Use Stability	5.0	-4.8	-4.8	-3.5	-1.8	-1.3	-3.5
· Provincial Policies & Plans	2.0	-	-	-	-3.0	-2.0	-
Study Area Rating		-2.69	-2.64	-3.24	-3.11	-3.81	-2.69
3. Community & Regional Area							
· Existing Land Use	10.0	-2.0	-2.0	-1.0	-3.0	-3.0	-2.0
· Proposed & Planned Land Use	10.0	-2.3	-2.3	-1.6	-3.0	-3.0	-1.6
· Provincial Policies & Plans	1.0	-	-	-	-4.0	-3.0	-
Study Area Rating		-2.15	-2.15	-1.30	-3.05	-3.00	-1.80
4. Access Roads							
· Existing Land Use	10.0	-5.0	-5.0	-1.0	-3.4	-3.4	-1.0
· Proposed & Planned Land Use	10.0	-4.3	-4.3	-0.5	-4.3	-4.3	-0.5
Study Area Rating		-4.65	-4.65	-0.75	-3.85	-3.85	-0.75
OVERALL RATING		-3.03	-2.91	-2.89	-3.23	-3.47	-2.42

REVIEW OF MAJOR ISSUES AND TRADE-OFFS

The second analysis technique used was a review of major issues and trade-offs. Issues relate to a specific siting option, while trade-offs concern a comparison between siting options. These issues were identified by the land use consultant and used as the basis for establishing the key land use trade-offs resulting from the comparison of siting option pairs. They are presented in Table 8.5 for each siting option and are organized by study area.

Reference should be made to the M.M. Dillon Limited (1985a) report for a discussion of the comprehensive list of issues and trade-offs identified by all consultants in the site selection process, into which the land use concerns were integrated.

TABLE 8.4

IDENTIFICATION OF MAJOR LAND USE ISSUES

Siting Option/ Study Area	Issue
LF-3C	
Site:	. moderately low conflict with existing residential land use - few residences displaced . incompatibility with existing and future agricultural land use
Site Vicinity:	. low conflict with existing residential land use . incompatibility with existing and future agricultural land use
Access Roads:	. most constrained of all access routes - traverses existing and future urban development in Vineland area

TABLE 8.4

(Continued)

IDENTIFICATION OF MAJOR LAND USE ISSUES

Siting Option/ Study Area	Issue
Community and Regional:	. moderately low conflict with existing and future residential land use . basic incompatibility with stable agricultural community
LF-9C	
Site:	. least conflict with existing residential land use - fewest residences displaced . incompatibility with existing and future agricultural land use
Site Vicinity:	. least conflict with existing land use . basic incompatibility with existing and future agricultural land use
Access Roads:	. second most constrained of all access routes - traverses existing and future urban development in Vineland area
Community and Regional:	. moderately low conflict with existing and future residential land use . basic incompatibility with stable agricultural community
LF-1E	
Site:	. moderately high conflict with existing and future land use - several residences displaced . basic incompatibility with agricultural lands and policies, but proximate to heavy industrial area to north

TABLE 8.4
(Continued)
IDENTIFICATION OF MAJOR LAND USE ISSUES

Siting Option/ Study Area	Issue
Site Vicinity:	. moderate conflict with existing and future land uses - generally agricultural with residential community at Cook's Mills
Access Roads:	. minimal impact potential on existing and future land uses
Community and Regional:	. moderately low conflict with existing and future residential land use . substantial heavy industrial lands to north of site - potential siting compatibility
LF-1E/PI-27E	
Site:	. moderately high conflict with existing residential land use - highest number of residences displaced; basic agricultural conflict (LF-1E) . least conflict with future land uses due to industrial designation on PI-27E
Site Vicinity:	. moderately high conflict with existing residential land use . low conflict with existing heavy industrial uses . low conflict with future land use due to proximity to heavy industrial lands
Access Roads:	. minimal impact potential on existing and future land uses
Community and Regional	. moderately high conflict with existing and future residential land use . substantial heavy industrial lands to north of site - potential siting compatibility

TABLE 8.4

(Continued)

IDENTIFICATION OF MAJOR LAND USE ISSUES

LF-4N/PI-1N

Site:	. moderate conflict with existing residential uses - several residences displaced . moderate conflict with future land uses - basic agricultural conflict, although much of LF-4N designated for sanitary landfill
Site Vicinity:	. moderate conflict with existing and future land uses - basic agricultural conflict
Access Roads:	. moderate constraint with existing and future land uses - major urban development proposal along route
Community and Regional	. moderately high conflict with existing and future land uses - proximity to urban development in Milton area

LF-4N/PI-13N

Site:	. moderate conflict with existing residential uses - several residences displaced . moderate conflict with future land uses - basic agricultural conflict, although much of LF-4N designated for sanitary landfill
Site Vicinity	. major conflict with existing land uses - highest number of residences in site vicinity . moderate conflict with future land uses - basic agricultural conflict
Access Roads:	. moderate conflict with existing and future land uses - major urban development proposal along route

TABLE 8.4
(Continued)
IDENTIFICATION OF MAJOR LAND USE ISSUES

Community and Regional	. moderately high conflict with existing and future land uses - proximity to urban development in Milton area

FINAL RANKING OF SITING OPTIONS

INTRODUCTION

The purpose of this section is to present the land use consultant's logic and judgments, which contributed to the analysis and final ranking of the six remaining siting options.

The final ranking of the six siting options from a land use perspective was based upon the indicator and factor aggregation and review of the major issues and trade-offs derived from the comparison of siting options pairs. Both of these analysis techniques permitted a close examination of the differences between the sites from a land use perspective. The final ranking represents a synthesis of these two approaches.

Table 8.5 presents the Final Ranking of Siting Options of the land use consultant taking into account both techniques. The only variation from the results of the Factor/Indicator Aggregation process is that no distinction has been made between siting options LF-3C and LF-4N/PI-1N.

The comparison between LF-3C and LF-4N/PI-1N revealed several trade-offs. In the quantitative analysis, LF-3C scored somewhat more suitable, primarily on the strength of few constraints, such as existing residential and commercial facilities, on site and in the site vicinity. LF-3C is preferred in three of the four study areas for the factor Existing Land Use (site, site vicinity and community and regional area), although the margin of preference is not substantial in any case. In the fourth study area, access roads, LF-4N/PI-1N is clearly preferred due to urban development in Vineland enroute to LF-3C.

In terms of the Land Use Stability factor, there is a clear preference for LF-4N/PI-1N in both the site and site vicinity due to the high proportion of absentee owned lands, in contrast to the high level of land stability near LF-3C.

Provincial Policies and Plans are applicable only to LF-4N/PI-1N, although they are not severely affected by the siting of facilities at either LF-4N or PI-1N. The preference, nonetheless, is for LF-3C due to the absence of these constraints.

In summary, the numerical advantages favouring LF-3C resulting from the quantitative analysis are largely offset in consideration of the future use of both siting options. Whereas, LF-3C is in a stable, agricultural community, LF-4N/PI-1N appears to be in a transitional area in which the former agricultural land use pattern is becoming urbanized, as exemplified by the proposed landfill on LF-4N. Given the many trade-offs mentioned above, it was concluded that no clear preference could be determined between the two siting options.

TABLE 8.5
FINAL RANKING OF SITING OPTIONS

Preferred Siting Option	LF-1E/PI-27E
	LF-1E
To	LF-9C
	LF-4N/PI-1N and LF-3C
Least Preferred Siting Option	LF-4N/PI-13N

It was concluded that LF-1E/PI-27E was clearly preferred over all siting options, that LF-4N/PI-13N was clearly the most preferred siting option, and that the magnitude of differences amongst the remaining four siting options were less pronounced.

PREFERRED SITING OPTION - LF-1E/PI-27E

This siting option was selected by the land use consultant as the preferred siting option because it offered some very significant positive attributes not offered by the other siting options. These attributes were considered to be very important in the land use analysis.

The most significant positive attribute of this siting option is that site PI-27E is industrially designated in the draft Niagara Falls Official Plan. In addition, two major heavy industrial uses, the Ford Glass plant and the Cyanamid of Canada plant, are located in close proximity to this site, as are several other industrial uses.

This is the only siting option which offers the opportunity for a high degree of land use compatibility both now and in the future, on the basis of the municipal official plan designation and adjacent heavy industrial land uses. The fact that the physical/chemical treatment plant and the incinerator, both heavy industrial in nature, will not be located in an agricultural area was a major consideration in the selection of this siting option.

The second major positive attribute of this siting option is the excellent access to the Queen Elizabeth Way which results in a very short access road to a 400-series highway, and the minimal impacts on residential uses resulting from truck traffic to this siting option.

Another positive attribute of this site is the high percentage of existing and future industrial lands within the community and regional area, which are designated in the official plan.

In addition, relative to the West Lincoln sites, LF-3C and LF-9C, this area exhibits a lower level of land stability as evidenced by the high percentage of absentee land ownership.

The major constraint associated with this siting option is the number of residences which will be displaced by this facility (15, the second highest of all siting options) and the number of residences located in the site vicinity (286, second highest of all siting options). It should, however, be noted that the number of residences within close proximity of the sites is lower for this siting option than for both the Milton siting options. A portion of the site vicinity includes the community of Cook's Mills, which is reflected in the number of residences in the site vicinity.

The decision to select this siting option as the preferred siting option reflects the land use consultant's resolution of a major land use trade-off. The question is, is it preferrable to select a site located in an agricultural area where a basic land use conflict exists, and where no compatible industrial uses are located, but also where fewer residential uses are likely to be impacted?

Alternatively, is it preferrable to select a site which is located on the periphery of an urban area in a growing industrial area where there are compatible industrial uses, but where, due to its semi-urban nature, there may be a larger number of residential uses impacted?

The land use consultant concluded, after examining the factors selected and the data which were collected, that the latter option (of which LF-1E/PI-27E was the only example) was the preferred option.

SITING OPTION LF-1E

Siting option LF-1E was selected as the second most preferred siting option because it exhibited several of the same positive attributes as siting option LF-1E/PI-27E.

Although this siting option does not allow the treatment facilities to be located on industrial lands, this site is located within 1 kilometre of the lands at site PI-27E which are proposed to be designated industrial in the Niagara Falls Official Plan. Also, the site is 2.5 kilometres from the Cyanamid plant and 3.0 kilometres from the Ford Glass plant.

As noted, the site enjoys excellent access to the Queen Elizabeth Way and, therefore, minimal impacts arising from truck traffic to this site are anticipated.

In addition to the other reasons cited above for the ranking of LF-1E, this site has the following advantages over the other siting options of West Lincoln and Milton:

- there is a lower level of land stability around LF-1E than either of the West Lincoln sites, indicated primarily by higher levels of absentee land ownership.
- in the community and regional area, there is a very large land area devoted to heavy industrial uses, and designated in the municipal official plan for future industrial development.
- in comparison to the Milton sites, there are fewer residences in close proximity to the siting options.
- in comparison to the Milton sites, there is no potential for conflict with provincial planning policies, such as the Niagara Escarpment Plan and the Parkway Belt Plan, which provide for public open space uses near sites LF-4N, PI-1N and PI-13N.

The major constraint associated with siting option LF-1E is that it has the highest number of residences on site which will be displaced.

Siting option LF-1E is also not preferred to the West Lincoln and Milton siting options in the following respects:

- a larger number of residences located in the site vicinity than LF-3C and LF-9C.
- a larger number of vacant lots of record (indicating the potential for future development) than the Milton or West Lincoln siting options.

On balance, however, these considerations were not considered significant enough to counter the advantages of LF-1E.

SITING OPTION LF-9C

This siting option was determined to be the third most preferred siting option. The major considerations in this ranking are outlined below.

Relative to LF-3C, the other West Lincoln siting option, no significant difference was evident for the factors Planned and Proposed Land Use, Provincial Policies and Plans, and Land Use Stability. The only significant difference is the number of residences on each site, in the site vicinity and along the access roads to each site.

In all of these cases, LF-9C is preferred.

When compared to the two Niagara Falls siting options, LF-9C was determined to be less preferred primarily due to the industrial nature of the Niagara Falls sites, the excellent accessibility available to LF-1E and PI-27E, and the major impacts associated with the access route to LF-9C, particularly in traversing the Vineland urban area.

When compared to the two Milton siting options, it was concluded that this siting option is preferred to both LF-4N/PI-1N and LF-4N/PI-13N. The reasons for this are:

- in an examination of the number of residences in the site and site vicinity, there are more residences at the Milton sites than LF-9C. As the dislocation and disruption of residents is one of the prime concerns of OWMC and the magnitude of difference is significant, this was a major consideration in the preference of LF-9C over both LF-4N/PI-1N and LF-4N/PI-13N.

- in the community and regional study area, there is a much lower potential for impact on existing and future residential uses around LF-9C than the two Milton siting options.

- the absence of conflict with the identified provincial planning policies in the case of LF-9C.

The major similarity between LF-9C and the Milton siting options is the basic land use compatability issue of locating these facilities in an agricultural area.

The significant areas in which a preference for the Milton siting options is evident are the number of residences impacted along access routes, and in the lower level of land use stability in the Milton area.

SITING OPTION LF-4N/PI-1N

This siting option was determined to be the fourth most preferred siting option, together with LF-3C.

When compared to siting option LF-4N/PI-13N, there was a clear preference for LF-4N/PI-1N for the following reasons:

- significantly fewer residences in the site vicinity of LF-4N/PI-1N.
- the situation of the two sites in relatively close proximity means that impacts on the Milton community will be restricted to a smaller geographic area. In a sense, LF-4N/PI-1N more closely resembles an integrated siting option than does the decentralized LF-4N/PI-13N.
- less impact on residential uses along access routes to siting option LF-4N/PI-1N.

Those areas in which there is a preference for LF-4N/PI-13N include provincial policies and plans and, marginally, land use stability.

Relative to the other siting options, this siting option is less preferred from the standpoint of number of residences in the site vicinity (LF-3C, LF-9C) and the lack of compatible industrial uses (LF-1E, LF-1E/PI-27E). Also, LF-4N/PI-1N is preferable to these siting options from the standpoint of land use stability, as evidenced by the high levels of absentee land ownership and land value trends.

SITING OPTION LF-3C

It was concluded that this siting option was the fourth most preferred siting option, together with LF-4N/PI-1N.

The reason for this inability to select a preferred siting option from these siting options lies in the fact that, while there are major advantages and disadvantages to each, in the view of the land use consultant these appear to balance each other.

The major strengths of LF-3C in comparison to LF-4N/PI-1N are as follows:

- fewer residences on site and in the site vicinity.
- less potential impact on residential use located in the community and regional area.
- no impact on provincial planning policies.

The strengths of LF-4N/PI-1N are as follows:

- less impact to residences along local and regional access routes to the siting option.
- LF-4N/PI-1N is located in a less stable agricultural area than LF-3C.

SITING OPTION LF-4N/PI-13N

This siting option was determined to be the least preferred siting option by the land use consultant. The reasons for this preference relative to each other siting option have been outlined previously. However, to summarize, the following are the most significant disadvantages associated with this siting option:

- LF-4N/PI-13N ranks last in terms of number of residences in close proximity to the site and in the total site vicinity.

- the siting option ranks very low (fourth) in terms of number of residences on site.

- the site is located in an agricultural area with no industrial uses nearby.

SENSITIVITY ANALYSES

INTRODUCTION

During Phase 4A, facilities characteristics assumptions were developed by OWMC and the Site Selection Team in order to guide the work of the Site Selection Team. The relevant assumptions to the land use analysis were previously outlined in Table 2.3.

Two of these assumptions are currently being reviewed by OWMC to determine whether they are the most appropriate operating procedures.

These assumptions relate to the use of rail as a means of transporting additives and reagents to the site, and to the assumption that total solidification of materials deposited in the landfill will occur. Therefore, it was necessary for the Site Selection Team to determine whether changes to these assumptions would affect the final ranking of siting options. Sensitivity analyses were undertaken by each consultant in order to make this determination.

RAIL ACCESS

Chapter 5 documents the analysis of land use impacts anticipated as a result of the provision of rail access to each site.

The impacts associated with each rail access option considered by the Site Selection Team are summarized in Table 5.2. The options selected by the Site Selection Team are listed below, together with the anticipated land use impacts:

- LF-3C - Option 2 - no land use impacts
- PI-1N - Option 2 - no land use impacts
- LF-1E - Option 1 - no land use impacts
- LF-4N - Option 1 - no land use impacts
- LF-9C - Option 4 - one commercial use impacted

This indicates that only one additional land use impact is anticipated, in the case of LF-9C. It was therefore concluded that no change in the final ranking of siting options would result from the decision to use rail as a method of transportation to the sites.

PARTIAL SOLIDIFICATION

OWMC has commissioned an analysis of the differences between total solidification and partial solidification of treated wastes prior to deposition in the engineered landfill. This analysis is being undertaken by M.M. Dillon Limited, and it involves, among other matters, an examination of the options for the disposal of liquid effluent which will be necessary if partial solidification is selected. Reference should be made to the Site Selection report prepared by M.M. Dillon Limited.

Each member of the Site Selection Team considered whether their final ranking of siting options would change if one method of disposal of liquid effluent, evaporation, was selected. The land use consultant concluded that this technology would not result in significant additional land use impacts which could alter the final ranking of siting options.

PARCEL SIZES - LF-1E AND LF-3C

During Phase 4A, a question arose concerning the site size required for sites LF-3C and LF-1E. Each site selection consultant was requested, therefore, to consider whether revised site boundaries chosen by the Site Selection Team would alter the ranking of siting options.

In the case of LF-3C, the site would include lands east of Krick Road north to Elcho Road within the Phase 3B acquisition area. Two additional residences would be acquired, and 2 other residences would be located immediately adjacent to the site. These additional impacts only reinforce the choice of LF-9C over LF-3C, and the decision not to choose a preferred siting option between LF-3C and LF-4N/PI-1N. No change in the ranking of siting options is warranted.

In the case of LF-1E, the revised site boundary would involve additional lands west of Morris Road, and would involve the displacement of three additional residences, and several residences along Schisler Road would be located in close proximity to the revised site boundaries. Also, the site boundaries would be extended closer to the community of Cook's Mills. This would, therefore, represent a significant additional impact. However, given the major positive attributes associated with LF-1E/PI-27E and the clear preference for this siting options, no change in the final ranking of siting options is warranted.

CONSTRUCTION IMPACTS

The land use consultant examined the issue of construction impacts in terms of the temporal disruption to land uses near the site.

It was determined that construction impacts were generally short term in nature and would have very limited off site impacts, except perhaps to land uses directly adjacent to the site. Given that the site includes substantial buffer zones to separate the facilities from adjoining properties, it is expected that most impacts will be on site.

Some disruption to the use and enjoyment of adjoining properties may be experienced due to noise, dust, and truck traffic generated by the construction phase, but these are expected to be temporary in nature and will not have long term impact.

Given this scenario, the land use consultant considered the overall disruption effects of the construction phase to be similar for all sites, and in any case, not as significant as other anticipated impacts. There was no change to the ranking of the siting options as a result of construction realted land use impacts.

FUTURE SCENARIOS

The review of proposed and planned land uses in the community and regional study area (2-5 km) was based entirely on published documents produced by municipal and regional governments. Municipal and regional official plans and planning policy documents were utilized exclusively by the land use consultant to make projections on future land use and population growth scenarios in the 2-5 km zone, resulting in a conservative growth projection.

However, the Site Selection Team wanted to ensure that future conditions in the area, without the facility are used as a basis for comparison with predicted impacts. The purpose of the future scenarios analysis, therefore, was to determine whether predicted impacts would be greater or less given the future land use scenarios.

The review of future scenarios provided a realistic assessment of growth trends in the year 2001, utilizing historic trends and development activity occurring in the municipalities within which the candidate sites are located. The future land use scenario would then be incorporated into the assessment of impacts in the community and regional study area for the ranking of siting options.

To produce this assessment of future scenarios, the land use consultant obtained data on historical growth trends from municipalities and other agencies, interviews with municipal staff, and review of development activity, such as plans of subdivision, on file with the municipality. A copy of this report is on file with the land use consultant.

The future land use scenarios analysis confirmed the conclusions of the balance of the Phase 4A analysis with respect to future land use, development trends and population growth.

Rates of growth in residential and industrial development will be highest around the Milton candidate sites. In the rural and hamlet areas of Milton, annual growth rates are expected to be approximately 2%, resulting in a total population increase of 35-40% between the present time and the year 2001. Also, it is anticipated that vacant residential lands within the Milton Urban Area which are within 5 km of the candidates sites will be completely developed by the year 2001. Minimal industrial growth will occur within 5 km of the candidate sites due to the lack of designated industrial lands.

In the Town of West Lincoln, no urban residential or industrial development is anticipated within 5 km of either candidate sites by the year 2001. The rate of population growth in the hamlet and rural areas is expected to continue at historical levels, in the 1.0% to 1.6% per annum range.

In Niagara Falls, industrial and residential growth is projected to occur at very low levels. Total population growth within 5 km of PI-27E is only expected to be 1 000-1 500 persons between now and the year 2001. This reflects annual growth rates in the .7% -.8% range. Due to the surplus of vacant industrial land in the City of Niagara Falls (currently a 180 year supply) minimal industrial growth is anticipated within 5 km of PI-27E and LF-1E.

Based upon the foregoing conclusions, it was determined that no change in the ranking of the six siting options was warranted. The higher rate of growth in Milton confirms the higher constraints associated with these siting options due to a larger number of residences. The lack of industrial and residential growth projected for West Lincoln confirms the basic rural nature of the area. The slow growth that is anticipated for Niagara Falls does not alter the advantages associated with the industrial nature of these siting options.

CONCLUSIONS

The foregoing represents the scope of the land use consultant's responsibilities and inputs with respect to land use, land use planning and land ownership aspects of environmental impacts in OWMC's site selection process to the end of Phase 4A. The results of the land use analysis, including the new data inputs, the aggregation of indicators and factors, the comparison of siting option pairs, the identification of issues and trade-offs, and the final ranking of siting options, were provided to the Site Selection Team to be utilized as the basis for the site selection technical analysis.

The report should be read in conjunction with the Site Selection Process. Phase 4A: Selection of a Preferred Site(s) - Site Selection prepared by M.M. Dillon Limited.

After considering the recommendations of the Site Selection Team, OWMC selected siting option LF-9C as the preferred siting option. From a land use perspective, this siting option has significant advantages and disadvantages. Impacts on-site and on nearby land use will be minimized because of the low number of residential and commercial land uses. However, the two significant disadvantages of the siting option are the conflict with the rural character of the community, and the number of residential and commercial uses that will be impacted along the preferred access route. Methods to mitigate these impacts should be considered carefully during Phase 4B.

It is also suggested that discussions with the Town of West Lincoln concerning appropriate methods to control land use around the site be initiated in order to minimize land use conflicts.

GLOSSARY OF TERMS

Note: This glossary of terms refers to terms used in the land use report and does not necessarily apply to other OWMC or consultant's reports.

Access roads: Access roads are roads that will be travelled by vehicles carrying special wastes, additives and reagents and inter-site transfer materials (treated wastes) to and from the OWMC facilities. Preferred access roads have been chosen by the site selection team for routes from the 400 series highways to the candidate sites. The portion of the access road system from the 400 series highways to the site and the roads between sites are referred to as local and regional access roads. The land use analysis considered the access roads study area to be an 800 metre zone, measured from the road centreline, abutting each side of all regional and local roads leading to the candidate site utilized by facility generated truck traffic.

Aggregation of factors: The process of combining all factors of a specific siting option to produce a composite siting option suitability by Factor Grouping.

Aggregation of indicators: The process of combining all indicators for one factor to produce a factor rating. Indicators are aggregated for each siting option.

Basic acceptability analysis: A step in the evaluation process that involves an assessment of the acceptability of siting options to ensure that they meet basic agency requirements and/or takes into consideration major new constraints identified as a result of Phase 4A data collection.

Community and regional area: The community and regional area is the broader study are surrounding the site vicinity boundary. This was defined to be the area between the outer edge of the site vicinity and a circle within a 5 km radius from the site centre.

Composite constraint mapping: A method of analysis that involves identification of factors that may pose constraints to develpoment, collection of data, mapping of data on constraint maps to identify areas not excluded by the constraints shown on the maps. For example, this method could be used to identify the preferred location for siting a facility.

Constraint: A constraint is a limitation imposed on the use of the land by a specific feature which is incompatible with the siting of OWMC facilities. Major land use constraints include residences, commercial facilities and residential land use designations.

Data matrices: Data matrices are tables which record data or information collected during the site selection process. The data corresponds to each factor and indicator.

Factor: Each factor represents a positive or negative consideration which would assist in comparing siting options. The four land use factors are existing land uses, proposed and planned land uses, land use stability and provincial plans and policies.

Factor grouping: A group of related factors with similar considerations which would assist in comparing siting options. The land use factor grouping was called "land use impacts" and consists of the four land use factors.

Factor ranking: The process of establishing the relative importance of each factor. In order for the site selection team to compare siting options using the factors, it is necessary to consider the relative importance of the factors.

Impact: Impact refers to the effect or influence that the introduction of the OWMC facility may have. Impacts may be either positive or negative.

Indicators: Factors are subdivided into indicators. Indicators are ways of more precisely identifying, describing and predicting risks, impacts and costs. Examples of indicators for the factor "existing land use" are number of residences, commercial facilities, and industrial facilities.

Land use stability: Land use stability is a factor used in the land use assessment to qualitatively assess the stability of land uses and ownership/tenure patterns in a selected study area, based on recent trends.

Level of confidence: Level of confidence refers to the potential range of error or uncertainty associated with the data base or the interpretation of the data base.

Mitigation: Mitigation refers to methods that may be used to prevent, avoid or reduce the severity of land use impacts. An example may be the imposition of land use controls such as redesignation or rezoning of lands to control the type and form of adjacent development.

Official plan designation: An official plan designation is a representation of the permitted land uses for specific lands contained in the Official Plan. Examples include Residential, Commercial or Industrial land use designations.

Parcel options: A parcel is a portion of the site deemed suitable to establish OWMC facilities within the proposed site acquisition boundary as defined at the end of the Phase 3B site selection process. Parcel options were identified only for those sites which were considerably larger then the site size required to locate the facilities. Once a preferred parcel has been determined the parcel boundaries would become the basis for revised site acquisition boundaries.

Partial solidification: Partial solidification is a process whereby waste residues and effluents are subjected to treatment such that the volume of treated materials is reduced but a liquid effluent is produced, requiring alternative disposal. Partial solidification is currently being considered by OWMC as an alternative to total solidification.

Public consultation program: The public consultation program consisted of a series of meetings and workshops where individuals and groups who are directly or indirectly impacted by the siting of an OWMC facility were able to review and submit their comments on the various stages of the site selection decision-making process.

Rail access impact zones: Rail access impact zone are 170 metre and 250 metre zones abutting each side of potential rail spur lines.

Ranking of siting options: Ranking of siting options is the final step in the evaluation process. In this step the relative suitability of the siting options is determined and recommendations concerning the selection of a preferred site(s) are formulated.

Screening of indicators: Screening of indicators refers to a step in the evaluation process in which indicators were dropped from the analysis where there were no land use impacts for all siting options, where there were no differences among options or where it was not possible to use the indicator in the analysis.

Sensitivity analysis: Sensitivity analysis is an evaluation method to determine the effect of different facility assumptions (e.g., rail versus road access, total versus partial solidification) on the ranking of particular siting options.

Site acquisition area: The area identified in Phase 3B and further refined in Phase 4A, required for the location of facilities, including any buffer zones.

Siting option: Siting option refers to the combination of sites required to accommodate all OWMC facilities. An integrated siting option involves all facilities located on one site. For a partially integrated siting option two sites are required to accommodate the facilities i.e., landfilll (one site) incinerator (alternate site) and physical/chemical treatment plant (paired with either the landfill or incinerator). The options initially under consideration were LF-9C, LF-3C, LF-4N/PI-1N, LF-4N/PI-13N, LF-2N/PI-1N, LF-2N/PI-13N, LF-1E, LF-1E/PI-27E. Siting options involving LF-2N were excluded from further study during Phase 4A.

Siting option data profile: A summary of quantitative and qualitative data derived from a set of factors and indicators for each siting option and used as the basis of the evaluation of siting options.

Siting option pairs: As part of the evaluation process, each of the siting options listed above is compared successively with other siting options.

Site selection team: The site selection team consists of the group of consultants retained by OWMC responsible for comparing the candidate siting options.

Site vicinity: The study area immediately surrounding the site and potentially the most directly affected by the facilities, extending approximately 2 km from the site centre.

Suitability ratings: Suitability ratings refer to an assignment of numeric values to land use data for the purposes of identifying the relative suitability of siting options for an OWMC facility. Siting options are deemed more suitable where negative land use impacts are minimized.

Study areas: Various study areas were chosen for use by all consultants during the evaluation process. Study areas considered by the land use consultant included the site, site vicinity, rail and access road and the community and regional study areas.

Total solidification: Total solidification refers to a process whereby all waste residues and effluents are subjected to various treatments rendering them solifified. The land use evaluation of siting options assumed a total solidification treatment process.

Transportation impact index: In order to evaluate the land use impacts associated with preferred access roads for each site, indices were developed to assess impacts on sensitive land uses (residential and commercial facilities). The comparison is based on the total number of uses multiplied by the change in Average Annual Daily Trips (AADT)* along the access road to the site. The impact index was utilized primarily in the landuse analysis of the location of the physical/chemical treatment plant for partially integrated siting options.

*Annual Average Daily Trips (AADT) is a transporation planning term provided to the land use consultant by the transporation consultant as a component of the transporation impact index.

Zoning by-law designations: A zoning by-law designation is a specific delineation of permitted uses and development standards for a parcel of land.

LIST OF REFERENCES

Clayton Research Associates Limited, Site Selection Process Phase 4A: Selection of a Preferred Site(s) - Economic Base (1985)

Clayton Research Associates Limited, Site Selection Process Phase 4A: Selection of a Preferred Site(s) - Municipal Finance and Services Analysis (1985)

Ecologistics Limited, Site Selection Process Phase 4A: Selection of a Preferred Site(s) - Agriculture (1985)

Gartner Lee Associates Limited, Site Selection Process Phase 4A: Selection of a Preferred Site(s) - Biology (1985)

Gartner Lee Associates Limited, Site Selection Process Phase 4A: Selection of a Preferred Site(s) - Geologic, Hydrogeologic and Geotechnical Considerations (1985)

Leon Kentridge Associates Limited, and Marshall Macklin Monaghan Limited, Site Selection Process Phase 3B: Selection of Candidate Sites - Land Use (1984)

M.M. Dillon Limited, Site Selection Process Phase 4A: Selection of Preferred Site(s) - Site Selection (1985)

M.M. Dillon Limited, Site Selection Process Phase 4A: Interim Site Selection Report - Candidate Site LF-2N (1985)

M.M. Dillon Limited, Site Selection Process Phase 4A: Selection of a Preferred Site(s) - Transportation (1985)

Monenco Limited, Site Selection Process Phase 4A: Selection of a Preferred Site(s) - Engineering (1985)

Monenco Limited, Status Report - Facility Design (1985)

Ontario Research Foundation, Site Selection Process Phase 4A: Selection of a Preferred Site(s) - Atmospheric Conditions (1985)

Ontario Waste Management Corporation, Facilities Development Process Phase 4A: Report (1985)

LIST OF MAP REFERENCES

LF-2N

City of Brampton, Official Plan of the City of Brampton Planning Area, Office Consolidation (1984)

City of Brampton, Official Plan Amendment Nos. 1 (1977), 4 (1979), 6 (1979) 36 (1984) and 61 (1982)

City of Brampton, Zoning By-law No. 56-83 (1983)

City of Mississauga, Official Plan (1980)

City of Mississauga, Derry East Business Park Secondary Plan Unapproved Draft (1982)

City of Mississauga, By-law No. 5500 as amended, Office Consolidation (1979)

Ministry of Municipal Affairs and Housing, The Parkway Belt West Plan (1978)

LF-4N

City of Burlington, Zoning By-law No. 1642, Office Consolidation (1982)

City of Burlington, Official Plan, Amendment No. 49, Office Consolidation (1983)

Ministry of Municipal Affairs and Housing, The Parkway Belt West Plan (1978)

Provincial Secretary for Resources Development, Niagara Escarpment Plan (1984)

Town of Milton, Official Plan Milton Planning Area (1982)

Town of Oakville, Zoning By-law No. 1965-136 as amended (1983)

PI-1N

Ministry of Municipal Affairs and Housing, The Parkway Belt West Plan (1978)

Town of Milton, Official Plan Milton Planning Area (1982)

Town of Oakville, Zoning By-law No. 1965-136 as amended (1983)

P1-13N

Ministry of Municipal Affairs and Housing, The Parkway Belt West Plan (1978)

Town of Milton, Official Plan Milton Planning Area (1982)

Town of Oakville, Zoning By-law No. 1965-136 as amended (1983)

LF-9C

Township of West Lincoln, Official Plan of the West Lincoln Planning Area (1979)

Township of West Lincoln, Zoning By-law No. 79-14 as amended (1982)

LF-3C

Regional Municipality of Haldimand-Norfolk, The Official Plan of the Haldimand-Norfolk Planning Area (1979)

Regional Municipality of Haldimand-Norfolk, Official Plan Amendment No. 6, Town of Dunnville District Plan (1982)

Regional Municipality of Haldimand-Norfolk, By-law 1-DU80 Zoning By-law of the Town of Dunnville (1980)

Township of Wainfleet, Official Plan of the Wainfleet Planning Area (1979)

Township of Wainfleet, Township of Wainfleet Zoning By-law No. 581-78 and 611-79 (1979)

Township of West Lincoln, Official Plan of the West Lincoln Planning Area (1979)

Township of West Lincoln, Zoning By-law No. 79-14 as amended (1982)

LF-1E

City of Niagara Falls, Official Plan Update Draft (1984)

Township of Crowland, By-law No. 1538 (1958)

Township of Willoughby, By-law No. 395 (1966)

City of Welland, Official Plan (1975)

City of Welland, Zoning By-law No. 2667 (1982)

Regional Municipality of Niagara, Regional Niagara Policy Plan (1981)

PI-27E

City of Niagara Falls, Official Plan Update Draft (1984)

City of Niagara Falls, Zoning By-law No. 82-20 (1983)

Township of Crowland, By-law No. 1538 (1958)

Township of Willoughby, By-law No. 395 (1966)

Regional Municipality of Niagara, Regional Niagara Policy Plan (1981)

APPENDICES

EXPLANATORY NOTE

The Report Appendices are organized in the order of the report chapters which they are in support of.

Chapter 1 - Introduction, appendices appear in Appendix A. Table A.1 indicates the data inputs which were either recieved from, or provided to, other site selection consultants.

Chapter 2 - Identification of Factors and Indicators Appendices appear in Appendix B. Appendix B.1 documents in detail the definition, rationale, significance, methodology, etc. for each land use factor and indicator. The relationship between Phase 3B and Phase 4A factors are outlined in Table B.2.

Appendix C is in support of Chapter 3 - Overview of Existing Environment. Tables C.1 to C.4 present the data matrices for the 3 candidate sites for which site boundary adjustments were made, PI-1N, LF-3C and LF-1E. The data matrice for LF-2N is also presented. This data reflects boundaries prior to site boundary refinements.

Appendix D is in support of Chapter 4 - Refinement of Site Boundaries. The data matrices used in this analysis appear in Table D.1.

Appendix E is in support of Chapter 5 - Rail Access Options. The data matrices used in this analysis appear in Table E.1.

Appendix F is in support of Chapter 6 - Access Road Options. Tables F.1 - F.3 list the access road options considered, and the data profiles for those new access roads added during Phase 4A.

Appendix G is in support of Chapter 7 - Location of Physical/Chemical Treatment Plant for Partially Integrated Siting Options. Table G.1 presents the data matrix used in this analysis.

Appendix H is in support of Chapter 8 - Comparison of Siting Options. Tables H.1 to H.7 present the detailed calculations used to derive the factor suitability ratings. Table H.8 presents the data matrices for all siting options after site boundary and access road refinements.

Appendices I and J present additional reports prepared during Phase 4A. These are Population Projections for the year 2001, Air Dispersion Model, and Planned and Proposed Land Uses: Official Plans (local and regional) and Zoning By-laws.

A - APPENDIX TO CHAPTER 1

APPENDIX A.1

DATA INPUTS TO/FROM OTHER CONSULTANTS*

To	From	Input	Application	Study Area
1. LKAL	ECOL	. Property boundaries mapping . Property boundaries and ownership data (assessment rolls)	. Access road options - vacant lots of record . Comparative Evaluation of Siting Options - vacant lots of record, absentee ownership	. access roads . site, site vicinity
2. LKAL	MMD-T	. Average Annual Daily Trips (AADT)	. AADT used to determine transportation inpact index in analysis of location of phys/chem. treatment plant for partially integrated siting options.	. access roads
3. LKAL	MON	. Site size (ha)	. Comparative Evaluation of Siting Options - % existing/designated land use.	. site
4. LKAL	IER	. Community population . existing population by traffic zone.	. Access road options - preliminary screening. . Input to population projections to 2001	. access roads . 0-20 km study area (ORF Airborne Emissions Model)
5. IER	LKAL/ MMM	. Number/location of residences	. Refinement of site boundaries & impacts on existing residents . Rail access options impacts on existing residents . Access road options- Preliminary screening . Access road options- Comparative evaluation of Siting Options	. site, site vicinity . 250 m rail corridor . local access roads . access roads . site, site vicinity access roads

APPENDIX A.1

(Continued)

DATA INPUTS TO/FROM OTHER CONSULTANTS*

To	From	Input	Application	Study Area
6. ORF	LKAL/ MMM	. Number of elevated receptors . Population projections to 2001	. Inputs to ORF Airborne Emissions Model . Inputs to ORF Airborne Emissions Model.	. 0-5 km study area . 0-20 km study area
7. MON	GRAL	. Property acquisition cost estimates	. Cost of acquiring properties in facilities development process.	. site, rail access, road access
8. IER ECOL GLAL	LKA	. Official Plan designations	o Used throughout Phase 4A analysis.	. site, site vicinity, community and regional area

* **Key to Consultants**

MMD-T = M.M. Dillon - Transportation
ECOL = Ecologistics Limited
GLAL = Gartner Lee Associates Limited
GRAL = Graydon Rodgers Appraisals Limited
IER = Institute of Environmental Research Inc.
LKAL = Leon Kentridge Associates Limited
MMM = Marshall Macklin Monaghan Limited
MON = Monenco Limited
ORF = Ontario Research Foundation

B - APPENDICES TO CHAPTER 2

OWMC PHASE 4A - FACTOR FOR SITE SELECTION

LEAD CONSULTANT: Leon Kentridge Associates Limited (LKAL)

FACTOR GROUPING: Land Use Impacts **FACTOR:** Existing Land Uses

FACILITY COMPONENTS AFFECTED: Physical/chemical treatment plant, incinerator, engineered landfill

DEFINITION OF FACTOR:

This factor addresses the compatibility of existing land uses with the proposed facility siting. The relative degree of land use compatibility or conflict will be assessed based upon the nature and extent of existing residential, industrial and commercial land uses in each study area. In addition, other predominant land uses, such as agricultural, recreational, etc., will be considered in determining the existing land use pattern of the regional area.

RATIONALE/SIGNIFICANCE OF FACTOR:

OWMC facilities are likely to have a significant impact upon existing land use activities, which will vary depending upon the nature of existing land uses. OWMC facilities are essentially industrial in nature and will be most compatible with industrial uses. Other uses, particularly residential, commercial and agricultural uses will not be compatible with the proposed facilities.

INTERPRETATION/METHODOLOGY:

The incidence of existing land uses are recorded on 1:10,000 scale maps of the study areas.

FACTOR APPLIED FOR FOLLOWING OPTIONS:

- Boundary refinement
- Rail access
- Access road
- Location of physical/chemical treatment plant
- Siting option comparison

INDICATORS:

(See following)

FACTOR: Existing Land Uses

INDICATOR:

(1) Existing land use pattern

CONSULTANT:

LKAL

Definition:

Percentage of each land use type for site, site vicinity, access roads and for 2-5 km study areas around each site.

Rationale/Significance:

Expression of land use pattern in proximity to, in community and regional area of, and along access roads leading to the candidate sites.

Sources of Information:

- Site investigations
- Existing land use mapping for regional area from local municipalities.

Inputs from Other Consultants

- Candidate sites sizes (in ha) to determine percentage land was provided by Monenco Limited.

Study Area:

- Site
- Site Vicinity
- Access Roads
- Community and Region

Comments/Assumptions/Limitations:

- Intended to reflect existing uses, regardless of current official plan and zoning designations. Residences in rural areas considered to be rural unless they (a) comprise a minimum cluster of 15 residences within a circle of 500 m radius; or (b), are designated as a hamlet or rural cluster, in which case they are considered to be residential. Although the community and regional study area generally extends to the municipal boundaries surrounding the candidate sites, the land use assessment applies only to a distance of 5 km from the site centre for purposes of data collection, analysis and mapping.

INDICATOR:

(2) Number of residences

CONSULTANT:

LKAL

Definition:

Residential units to be tabulated by study area.

Rationale/Significance:

Indication of number of residences impacted–potentially the most sensitive land use to disruption caused by OWMC facilities.

Sources of Information:

- Site investigations
- 1:10,000 1984 aerial photography

Inputs from Other Consultants

- None

Study Area:

- Site
- Site Vicinity
- Access Roads

Comments/Assumptions/Limitations:

- Residences counted during roadside field investigations and confirmed by aerial photography. Occupancy or tenure status not determined.

INDICATOR:	**CONSULTANT:**
(3) Number of industrial and commercial facilities	LKAL

Definition:

Industrial and commercial facilities to be tabulated by number and type by study area.

Rationale/Significance:

Indication of extent of impact on industrial and commercial uses, and relative compatibility with OWMC facilities.

Sources of Information:

- Site investigations
- 1:10,000 1984 aerial photography

Inputs from Other Consultants

- None

Study Area:

- Site
- Site Vicinity
- Access Roads

Comments/Assumptions/Limitations:

- Industrial and commercial facilities identified during roadside field investigations and confirmed by aerial photography. Occupancy or tenure status not determined. Where evident, structures used for both residential and commercial/industrial purposes were identified as both a residence and a commercial/industrial facility.

OWMC PHASE 4A - FACTOR FOR SITE SELECTION

LEAD CONSULTANT: Leon Kentridge Associates Limited (LKAL)

FACTOR GROUPING: Land Use Impacts **FACTOR:** Planned and Proposed Land Uses

FACILITY COMPONENTS AFFECTED: Physical/chemical treatment plant, incinerator, engineered landfill.

DEFINITION OF FACTOR:

This factor addresses the compatibility of future, planned and proposed land uses with the proposed facility siting. The relative degree of land use compatibility or conflict in the future will be predicted based upon the nature and extent of future residential, industrial and commercial land uses in each study area. In addition, other predominant land uses, such as agricultural, recreational, etc., and the extent to which these will remain unchanged in the future, will be considered in predicting the future land use pattern of the regional area.

RATIONALE/SIGNIFICANCE OF FACTOR:

OWMC facilities are likely to have a significant impact upon future land use activities, which will vary depending upon the nature of planned and proposed land uses. OWMC facilities are essentially industrial in nature and will be most compatible with industrial uses. Other uses, particularly residential, commercial and agricultural uses will not be compatible with the proposed facilities. This factor is intended to account for the different types and rates of growth which can occur around candidate sites.

INTERPRETATION/METHODOLOGY:

The incidence of planned (official plan and zoning designations) and proposed (development applications) land uses are recorded on 1:10,000 scale maps of each study area.

FACTOR APPLIED FOR FOLLOWING OPTIONS

- Boundary refinement
- Rail access
- Access road
- Location of physical/chemical treatment plant
- Siting option comparison

INDICATORS:

(See following.)

FACTOR: Planned and Proposed Land Uses

INDICATOR:

(1) Land use designations

CONSULTANT:

LKAL

Definition:

Percentage of official plan land use designations for site, site vicinity, access roads and for 2-5 km study area around each site.

Rationale/Significance:

Expression of community's intention regarding future land use.

Sources of Information:

- Local and regional official plans

Inputs from Other Consultants:

- Candidate site sizes (in ha) to determine percentage land use designations provided by Monenco Limited.

Study Area:

- Site
- Site Vicinity
- Access Roads
- Community and Region

Comments/Assumptions/Limitations:

- Although the community and regional study area generally extends to the municipal boundaries surrounding the candidate sites, the land use assessment applies only to a distance of 5 km from the site centre for purposes of data collection, analysis and mapping.

INDICATOR:

(2) Approved development proposals

CONSULTANT:

LKAL

Definition:

Development proposals (subdivisions, rezonings, official plan amendments, severances) with municipal approval.

Rationale/Significance:

Indication of future land uses proposed by landowner or agent for landowner, and municipally approved.

Sources of Information:

- Local and regional planning departments

Inputs from Other Consultants:

- None

Study Area:

- Site
- Site Vicinity
- Access Roads

Comments/Assumptions/Limitations:

- Development applications approved by local municipality may be subject to appeal.

INDICATOR:	**CONSULTANT:**
(3) Unapproved development proposals	LKAL

Definition:

Development proposals without municipal approval but submitted and being processed by municipal agencies.

Rationale/Significance:

Indication of future land uses proposed by landowner or agent for landowner.

Sources of Information:

- Local and regional planning departments

Inputs from Other Consultants:

- None

Study Area:

- Site
- Site Vicinity
- Access Roads

Comments/Assumptions/Limitations:

- Records of unapproved development applications may not be made available by municipality.

INDICATOR:

(4) Vacant lots of record

CONSULTANT:

LKAL

Definition:

Vacant lots on file with the assessment office, on which a residential (or other use) could be constructed under the existing zoning regulations.

Rationale/Significance:

Indication of future uses which could be constructed without zoning or official plan amendment.

Sources of Information:

- Assessment office records
- Local zoning by-laws

Inputs from Other Consultants:

- Property boundary mapping from assessment information along with zoning information on minimum lot size to determine vacant lots of record.

Study Area:

- Site
- Site Vicinity
- Access Roads

Comments/Assumptions/Limitations:

- No search of registered deeds undertaken to determine other constraints to development.

INDICATOR:

(5) Local official plan policies

CONSULTANT:

LKAL

Definition:

Policies in local plans relevant to facility siting.

Rationale/Significance:

Reflects need to respect local municipal policies regarding specific policies which may impact facility siting but which may not be fully expressed by the land use designation alone.

Sources of Information:

- Local official plans

Inputs from Other Consultants:

- None

Study Area:

- Site
- Site Vicinity
- Access Roads
- Community and Region

Comments/Assumptions/Limitations:

Official plan policies are generally applicable to the municipality as a whole and may not be site-specific in effect.

INDICATOR:	CONSULTANT:
(6) Regional official plan policies	LKAL

Definition:

Policies in regional official plans relevant to facility siting.

Rationale/Significance:

Reflects need to respect regional municipal policies regarding specific policies which may impact facility study but which may not be fully expressed by the land use designation alone.

Sources of Information:

- Regional official plans

Inputs from Other Consultants:

- None

Study Area:

- Site
- Site Vicinity
- Access Roads
- Community and Region

Comments/Assumptions/Limitations:

Official plan policies are generally applicable to the municipality as a whole and may not be site-specific in effect.

INDICATOR:

(7) Local zoning by-law

CONSULTANT:

LKAL

Definition:

Permitted uses and use restrictions of local zoning by-law relevant to facility siting, expressed as percentage of study area.

Rationale/Significance:

Reflects need to respect local municipal zoning restrictions on specific lands and land uses.

Sources of Information:

- Local zoning by-laws.

Inputs from Other Consultants:

- Candidate site sizes (in ha) to determine percentage of zoning designation provided by Monenco Limited.

Study Area:

- Site
- Site Vicinity

Comments/Assumptions/Limitations:

- Zoning not assessed beyond site vicinity study area as its significance will likely be reflected by the official plan designations.

OWMC PHASE 4A - FACTORS FOR SITE SELECTION

LEAD CONSULTANT: Leon Kentridge Associates Limited (LKAL)

FACTOR GROUPING: Land Use Impacts **FACTOR:** Land Use Stability

FACILITY COMPONENTS AFFECTED: Physical/chemical treatment plant, incinerator, engineered landfill.

DEFINITION OF FACTOR:

This factor addresses the variation which may occur between sites in terms of the stability and continuity of land use over time. Such indicators of land use change as land sales, land ownership by absentee owners, trends in land values, and building quality will be assessed to determine land use stability.

RATIONALE/SIGNIFICANCE OF FACTOR:

Land use impact from a facility siting may vary between sites depending upon the amount of land use change which is occuring on and in the vicinity of a site. Areas which are stable and which are experiencing few land use changes would be impacted to a greater extent than areas which are currently the subject of changes in land use.

INTERPRETATION/METHODOLOGY:

Incidences of development proposals and absentee land ownership were recorded on 1:10,000 scale base mapping. Land value and land sales data were recorded in tabular form. Building quality was considered on an overall study area, rather than property by property, basis.

FACTOR APPLIED FOR FOLLOWING OPTIONS:

- Siting option comparison

INDICATORS:

(See following.)

FACTOR: Land Use Stability

INDICATOR:

(1) Land sales

CONSULTANT:

LKAL

Definition:

Number of land sales during 1983 to mid-1984 period.

Rationale/Significance:

Changes in ownership may indicate land assembly in progress in advance of development activity and/or change in land use.

Sources of Information:

- Data extracted from TEELA - Data Management Systems,

  MISSISSAUGA, MILTON, WEST LINCOLN,
  NIAGARA FALLS REPORTS - 1983 MASTER FILE
  VOLUMES 1 AND 2; 1984 MASTER FILE,
  VOLUMES 1, 2 AND 3

Inputs from Other Consultants:

- None

Study Area:

- Site
- Site Vicinity

Comments/Assumptions/Limitations:

- Limited confidence in data since land sales information assessed for limited time period only.

INDICATOR:

(2) Development proposals

CONSULTANT:

LKAL

Definition:

Subdivision, rezoning, official plan amendment and severance applications with or without municipal approval.

Rationale/Significance:

Indicates interest in land development and land use change by private land owners.

Sources of Information:

- Local and regional planning departments

Inputs from Other Consultants

- None

Study Area:

- Site
- Site Vicinity

Comments/Assumptions/Limitations:

- Records of development proposals may not be made available by municipality.

INDICATOR:	**CONSULTANT:**
(3) Absentee Land Ownership	LKAL

Definition:

Number of properties and percentage of land area held by non-residents owners.

Rationale/Significance:

Can indicate interest in land development and/or land speculation.

Sources of Information:

- Local and regional assessment rolls, 1983-84

Inputs from Other Consultants:

- Assessment roll data were acquired and provided by Ecologistics Limited.

Study Area:

- Site
- Site Vicinity

Comments/Assumptions/Limitations:

- Assessment roll data may not be up-to-date to reflect existing ownership status.

INDICATOR:	**CONSULTANT:**
(4) Trends in land value	LKAL

Definition:

Change in land value based on land sales over 1983 to mid-1984 period.

Rationale/Significance:

Changing land values may indicate impending land development (increase) or economically depressed area (decrease). Fluctuations may reflect instability, while stable land values may reflect stability of use.

Sources of Information:

- Data extracted from TEELA Data Management Systems, MISSISSAUGA, MILTON, WEST LINCOLN, NIAGARA FALLS REPORTS - 1983 MASTER FILE, VOLUMES 1 AND 2; 1984 MASTER FILE, VOLUMES 1, 2 AND 3
- Land value appraisals by Graydon Rodgers Appraisals Limited

Inputs from Other Consultants

- None

Study Area:

- Site
- Site Vicinity

Comments/Assumptions/Limitations:

- Limited confidence in data as land sales and value information assessed for limited time period only.

INDICATOR:	**CONSULTANT:**
(5) Building quality	LKAL

Definition:

Residential and non-residential building quality; age, structural quality, external finish, size.

Rationale/Significance:

High level of building quality can indicate commitment to existing use.

Sources of Information:

- Roadside investigations

Inputs from Other Consultants:

- None

Study Area:

- Site
- Site Vicinity

Comments/Assumptions/Limitations:

- Assessment of building quality pertains to exterior only and may be subjective in nature.

OWMC PHASE 4A - FACTORS FOR SITE SELECTION

LEAD CONSULTANT: Leon Kentridge Associates Limited (LKAL)

FACTOR GROUPING: Land Use Impacts **FACTOR:** Provincial Policies and Plans

FACILITY COMPONENTS AFFECTED: Physical/chemical treatment plant, engineered landfill.

DEFINITION OF FACTOR:

This factor addresses the extent to which facility siting may conflict with the provisions of Provincial policy plans regarding permitted land uses. The Niagara Escarpment Plan and the Parkway Belt West Plan are two such policy plans, both of which affect lands in the vicinity of the candidate sites.

RATIONALE/SIGNIFICANCE OF FACTOR:

The Province has established policies and plans for the protection of unique scenic and recreational resources, for the separation of urban areas, and for the provision of utility and transportation corridors. Consideration will particularly be given to the degree that the industrial character of the physical/chemical treatment plant and incinerator may conflict with the intent and permitted uses set out in these plans.

INTERPRETATION/METHODOLOGY:

The incidence of Provincial land use designations was plotted on 1:10,000 scale base mapping for each candidate site. Review of the applicable policies and discussions with appropriate staff assist in establishing the degree of conformity.

FACTOR APPLIED FOR FOLLOWING OPTIONS:

- Siting option comparison.

INDICATORS:

(See following.)

FACTOR: Provincial Policies and Plans

INDICATOR:	**CONSULTANT:**
(1) Niagara Escarpment Plan	LKAL

Definition:

The Niagara Escarpment Planning area as defined by the Province of Ontario and depicted in the Plan prepared by the Niagara Escarpment Commission (revised 1984).

Rationale/Significance:

Controls preservation of natural character of the Escarpment and its adjacent scenic areas.

Sources of Information:

- Niagara Escarpment Plan, Provincial Secretariat for Resources Development, 1984
- Discussions with Provincial Planning Staff

Inputs from Other Consultants:

- None

Study Area:

- Site Vicinity
- Community and Region

Comments/Assumptions/Limitations:

Although currently not permitted by the Niagara Escarpment Plan, mitigation may be possible through redesignation of land or amendments to the plans to accommodate OWMC facilities as permitted uses.

INDICATOR:	**CONSULTANT:**
(2) Parkway Belt West Plan	LKAL

Definition:

As defined by the Province of Ontario and depicted in the Parkway Belt West Plan.

Rationale/Significance:

Restricts uses to those compatible with the Parkway Belt, including agricultural and recreational uses, transportation, utility and pipeline corridors, and other acceptable uses.

Sources of Information:

- Parkway Belt West Plan, June 1978, as amended
- Discussions with Provincial Planning Staff

Inputs from Other Consultants:

- None

Study Area:

- Site Vicinity
- Community and Region

Comments/Assumptions/Limitations:

Although currently not permitted by the Parkway Belt West Plan, mitigation may be possible through redesignation of land or amendments to the plans to accommodate OWMC facilities as permitted uses. The Parkway Belt West Plan is currently under review.

TABLE B.2
RELATIONSHIP OF PHASE 4A FACTORS TO PHASE 3B FACTORS

Phase 3B Factors Used for Identification of Candidate Sites	Corresponding Phase 4A Factors and Indicators
SITE FACTORS	
Existing Commercial and Industrial Uses	. retained as an indicator of "Existing Land Uses" factor.
Future Commercial and Industrial Uses	. retained as an indicator of "Proposed and Planned Land Uses" factor.
Existing Residents	. retained as an indicator of "Existing Land Uses" factor - "Number of residences" indicator.
Future Residents	. retained within the "Proposed and Planned Land Use" factor (Residential designations) - projections of future residents were provided to ORF for inclusion in analysis of atmospheric conditions.
Land Acquisition	. property valuations were provided as an input to "Capital Cost" factor prepared by facilities engineering consultant.

Phase 3B Factors Used for Identification of Candidate Sites	**Corresponding Phase 4A Factors and Indicators**
SITE FACTORS (Cont'd)	
Future Resources	• revised to "Provincial Policies and Plans" factor ("Niagara Escarpment Plan" and "Parkway Belt West Plan" indicators) and "Proposed and Planned Land Use" factor - "Land use designations" indicator.

Phase 3B Factors Used for Identification of Candidate Sites	**Corresponding Phase 4A Factors and Indicators**
SITE VICINITY FACTORS	
Existing Commercial and Industrial Uses	. retained as an indicator of "Existing Land Uses" factor.
Future Commercial and Industrial Uses	. retained as an indicator of "Proposed and Planned Land Uses" factor and land use designations.
Existing Residents	. retained as an indicator of "Existing Land Uses" factor.
Future Residents	. retained within the "Proposed and Planned Land Use" factor (Residential designations) - projections of future residents were provided to ORF for inclusion in analysis of atmospheric conditions.
Future Resources	. revised to "Provincial Policies and Plans" factor ("Niagara Escarpment Plan" and "Parkway Belt West Plan" indicators) and "Proposed and Planned Land Use" factor - "Land use designations" indicator.
Existing Community Character and Lifestyle-Indicator Land Use Pattern	. retained as an indicator of "Existing Land Use" factor.

Phase 3B Factors Used for Identification of Candidate Sites	Corresponding Phase 4A Factors and Indicators
ACCESS ROADS	
Local Access Roads Regional Access Roads	. The differentiation between local and regional access roads has been eliminated in Phase 4A as impacts on access roads are considered comprehensively in the detailed comparative evaluation of siting options.
Existing Commercial and Industrial Uses	. retained within "Existing Land Uses" factor.
Future Commercial and Industrial Uses	. retained as an indicator within the "Proposed and Planned Land Uses" factor.
Existing Residents	. retained within "Existing Land Uses" factor.
Future Residents	. retained within "Proposed and Planned Land Uses" factor - "Land Use designation" indicator.
	. retained as an indicator of "Existing Land Uses" factor.

C - APPENDICES TO CHAPTER 3

TABLE C.1
CANDIDATE SITE DATA MATRICES PRIOR TO BOUNDARY REFINEMENT
SITE LF-2N

FACTOR	INDICATOR	SITE	
1.Existing Land Use	.Existing Land Use Pattern	Rural/Vacant	6%
		Other	94%
	.Number of Residences	5	
	.Industrial & Commercial Facilities	Commercial	3
		Industrial	0
2.Proposed & Planned Land Use	.Land Use Designations	General Industrial	64%
		Prestige Industrial	30%
		Utilities	6%
	.Approved Dev. Proposals	-*	
	.Unapproved Dev. Proposals	Industrial (1)* (4.6 ha)	
	.Vacant Lots of Record	1	
	.Local Official Plan Policies	. Special policy area in secondary plan - both general and prestige industrial uses proposed. . O.P.A. required - proof of need for treatment facilities.	
	.Regional Official Plan Policies	. Agricultural resource area - protective policies for prime lands. . O.P.A. required. . Possible inclusion in long-term urban boundary area - subject to urban development policies.	
	.Local Zoning By-laws	Automotive Commercial	0.7%
		Agricultural	99.3%

C.1.2
SITE - LF-2N

FACTOR	INDICATOR	SITE		
3.Land Use Stability	.Land Sales	0		
	.Dev. Proposals	See above		
	.Absentee Land Ownership	Area Properties		92% 88%
	.Building Quality	Good 75%	Fair 0%	Poor 25%
	.Trends in Land Value	-		

* LF-2N matrix incomplete pending completion of Mississauga Land Use Study.

C.1.3
SITE VICINITY - LF-2N

FACTOR	INDICATOR	SITE VICINITY	
1. Existing Land Use	.Existing Land Use Pattern	Commercial	1%
		Rural/Vacant	88%
		Residential Cluster	2%
		Other	9%
	.Number of Residences	50	
	.Residences per 1,000 ha	31	
	.Residences within 1,000 m	35	
	.Industrial & Commercial Facilities	Commercial	12
		Industrial	0
2. Proposed & Planned Land Use	.Land Use Designations	General Industrial	24%
		Prestige Industrial	15%
		Special Policy Area	11%
		Transportation & Utility	24%
		Non-Urban	15%
		Major Open Space	9%
		Utilities	2%
	.Approved Dev. Proposals	**	
	.Unapproved Dev. Proposals	Commercial (1) 12.35 ha ** Industrial (2) 30.05 ha	
	.Vacant Lots of Record	20	
	.Local Official Plan Policies	. Special policy area permits both general and prestige industrial uses - policies to restrict prime industrial frontage to prestige uses. . No residential designations or development policies.	
	.Regional Official Plan Policies	. Agricultural resource area - protective policies for prime farmlands. . Possible inclusion in long-term urban boundary area - subject to future urban development policies.	

** LF-2N matrix inputs incomplete pending completion of Mississauga Land Use Study.

C.1.4
SITE VICINITY - LF-2N

FACTOR	INDICATOR	SITE VICINITY	
	.Local Zoning By-laws	Automotive Commercial (AC, AC-5)	0.2%
		Agricultural Parkway Belt (AP)	12.4%
		Residential (R5)	0.2%
		Residential (R4)	0.1%
		Residential (R3)	0.1%
		Agricultural (A, A Sec. 213)	87%
3.Land Use Stability	.Land Sales	13	
	.Dev. Proposals	See above	
	.Absentee Land Ownership	Area	80%
		Properties	60%
	.Building Quality	Good	71%
		Fair	18%
		Poor	11%
	.Trends in Land Value	• Serviced industrial land sales values in Mississauga rose sharply 1980 - 1981, declined slightly 1981 - 1982, risen strongly since. • Overall increase of 90% 1980 - 1983	

C.1.5
COMMUNITY REGIONAL - LF-2N

FACTOR	INDUSTRIAL	COMMUNITY REGIONAL	
1.Existing Land Use	.Existing Land Use Pattern	Residential	8%
		Commercial	1%
		Industrial	10%
		Rural/Vacant	81%
2.Proposed & Planned Land Use	.Land Use Designations	Residential	20%
		Commercial	5%
		Industrial	38%
		Rural	7%
		Parkway Belt	10%
		Other	20%
	.Local Official Plan Policies	. Substantial urban residential communities in Brampton and Mississauga (estimated population capacity 60,000). . Includes Meadowvale Village. . Substantial proposed prestige industrial along Highway 401 Corridor.	
	.Regional Official Plan Policies	. Substantial urban residential communities in Brampton and Mississauga. . Substantial prestige and general industrial in Brampton and Mississauga.	
3.Provincial Policies & Plans	.Niagara Escarpment Plan	N/A (not affected)	
	.Parkway Belt West Plan	. Primarily utility and transportation uses.	

C.1.6
ACCESS ROAD - LF-2N

FACTOR	INDICATOR	1 (via Hwy 10) ACCESS ROAD		2 (via Hwy 410)	
1. Existing Land Uses	.Existing Land Use Pattern	Rural/Vacant	100%	Rural/Vacant	100%
	.Number of Residences	12		4	
	.Industrial & Commercial Facilities	Commercial Industrial	0 0	Commercial Industrial	0 0
2. Proposed & Planned Land Use	.Land Use Designations	Special Policy Area Prestige Industrial General Industrial Utilities	54% 11% 32% 3%	Parkway Belt Prestige Industrial General Industrial	35% 31% 34%
	.Approved Dev. Proposals	-*		-*	
	.Unapproved Dev. Proposals	-*		Industrial 19.93 ha*	
	.Vacant Lots of Record	1		4	
	.Local Official Plan Policies	. Short access route through prestige and general industrial area		. Short access route through prestige and general industrial area	
	.Regional Official Plan Policies	. Outside urban boundary		. Outside urban boundary	

* LF-2N matrix inputs incomplete pending completion of Mississauga Land Use Study.

TABLE C.2

CANDIDATE SITE DATA MATRICES PRIOR TO BOUNDARY REFINEMENT

SITE - PI-1N

FACTOR	INDICATOR	SITE	
1.Existing Land Use	.Existing Land Use Pattern	Rural/Vacant	93%
		Other	7%
	.Number of Residences	12	
	.Industrial & Commercial Facilities	Commercial	2
		Industrial	0
2.Proposed & Planned Land Use	.Land Use Designations	Agricultural	78%
		Conservation & Hazard	22%
	.Approved Dev. Proposals	-	
	.Unapproved Dev. Proposals	-	
	.Vacant Lots of Record	10	
	.Local Official Plan Policies	. Prime agricultural designation - protective policies for farmlands. . O.P.A. required	
	.Regional Official Plan Policies	. Rural designation -strongly protective policies for farmlands. . O.P.A. may not be required.	
	.Local Zoning By-laws	Agricultural	100%

C.2.2
SITE - PI-1N

FACTOR	INDICATOR	SITE		
3.Land Use Stability	.Land Sales	0		
	.Dev. Proposals	See above		
	.Absentee Land Ownership	Area Properties		68% 52%
	.Building Quality	Good 86%	Fair 0%	Poor 14%
	.Trends in Land Value	-		

C.2.3
SITE VICINITY - PI-1N

FACTOR	INDICATOR	SITE VICINITY	
1.Existing Land Use	.Existing Land Use Pattern	Rural/Vacant	94%
		Residential Cluster	4%
		Other	2%
	.Number of Residences	110	
	.Residences per 1,000 ha	49	
	.Residences within 1,000 m	38	
	.Industrial & Commercial Facilities	Commercial	7
		Industrial	1
2.Proposed & Planned Land Use	.Land Use Designations	Agricultural	55%
		Conservation & Hazard	10%
		Niagara Escarpment	14%
		Parkway Belt	21%
	.Approved Dev. Proposals	Residential (1) (2 units) (40.47 ha)	
	.Unapproved Dev. Proposals	-	
	.Vacant Lots of Record	26	
	.Local Official Plan Policies	. Prime agricultural designation - protective policies for farmlands. . Significant rural residential cluster (Boyne) - no significant development policies.	
	.Regional Official Plan Policies	. Rural designation - strongly protective policies for prime agricultural lands. . No urban lands or development policies.	

C.2.4
SITE VICINITY - PI-1N

FACTOR	INDICATOR	SITE VICINITY		
	.Local Zoning By-laws	Conservation (04)		3.1%
		Semi-Public O.S. (03)		2.5%
		Public Open Space (01)		0.2%
		Conservation (0)		7.6%
		Agricultural		86.6%
3.Land Use Stability	.Land Sales	13		
	.Dev. Proposals	See above		
	.Absentee Land Ownership	Area		62%
		Properties		25%
	.Building Quality	Good	Fair	Poor
		87%	8%	5%
	.Trends in Land Value	. Milton area farmland sales values rose sharply 1980 - 1981, declined sharply 1981 - 1982. . Overall decrease of 4% 1980 - 1983		

C.2.5
COMMUNITY REGIONAL - PI-1N

FACTOR	INDUSTRIAL	COMMUNITY REGIONAL	
1.Existing Land Use	.Existing Land Use Pattern	Residential Residential Cluster Rural/Vacant	3% 2% 95%
2.Proposed & Planned Land Use	.Land Use Designations	Residential Agricultural Conservation & Hazard Open Space Parkway Belt	3% 48% 9% 1% 39%
	.Local Official Plan Policies	. Substantial urban residential designation in Milton (estimated population capacity 6,000). . Includes rural cluster (Omagh). . Substantial prime agricultural lands - protective policies for farmlands.	
	.Regional Official Plan Policies	. Substantial residential designation in Milton urban area. . Substantial prime agricultural lands - protective policies for farmlands.	
3.Provincial Policies & Plans	.Niagara Escarpment Plan	N/A (not affected)	
	.Parkway Belt West Plan	. Public and open space uses.	

TABLE C.3
CANDIDATE SITE DATA MATRICES PRIOR TO BOUNDARY REFINEMENT
SITE - LF-3C

FACTOR	INDICATOR	SITE	
1.Existing Land Use	.Existing Land Use Pattern	Rural/Vacant	100%
	.Number of Residences	9	
	.Industrial & Commercial Facilities	Commercial Industrial	0 0
2.Proposed & Planned Land Use	.Land Use Designations	Rural Hazard Lands	73% 27%
	.Approved Dev. Proposals	-	
	.Unapproved Dev. Proposals	-	
	.Vacant Lots of Record	2	
	.Local Official Plan Policies	. Rural designation - protective policies for prime agricultural lands; facilities permitted if impacts minimized. . O.P.A. required as facility will serve beyond township boundary.	
	.Regional Official Plan Policies	. Prime agricultural designation - protective policies for farmlands; waste facilities permitted if impacts minimized. . O.P.A. not required.	
	.Local Zoning By-laws	Agricultural	100%

C.3.2
SITE - LF-3C

FACTOR	INDICATOR	SITE		
3. Land Use Stability	.Land Sales	0		
	.Dev. Proposals	-		
	.Absentee Land Ownership	Area Properties		9% 8%
	.Building Quality	Good 78%	Fair 11%	Poor 11%
	.Trends in Land Value	-		

C.3.3
SITE VICINITY - LF-3C

FACTOR	INDICATOR	SITE VICINITY	
1.Existing Land Use	.Existing Land Use Pattern	Residential	1%
		Rural/Vacant	96%
		Other	3%
	.Number of Residences	172	
	.Residences per 1,000 ha	62	
	.Residences within 1,000 m	29	
	.Industrial & Commercial Facilities	Commercial	4
		Industrial	0
2.Proposed & Planned Land Use	.Land Use Designations	Rural	78%
		Hazard Lands	20%
		Recreational	2%
	.Approved Dev. Proposals	Residential (2) (1 unit) (10.0 ha) Robert Land Academy (24.0 ha)	
	.Unapproved Dev. Proposals	-	
	.Vacant Lots of Record	37	
	.Local Official Plan Policies	. Limited rural residential lands (Hamlet of Oswego). . Majority of area designated rural - protective policies for prime agricultural lands.	
	.Regional Official Plan Policies	. Prime agricultural designation on majority of area - protective policies for farmlands. . No urban lands or development policies.	

C.3.4
SITE VICINITY - LF-3C

FACTOR	INDICATOR	SITE VICINITY
	.Local Zoning By-laws	Public Industrial (M2) 0.1% Rural Commercial (RC) 0.05% Agricultural (A2, A2-107, A2-132) 98.05% Open Space (01) 1.8%
3.Land Use Stability	.Land Sales	7
	.Dev. Proposals	See above
	.Absentee Land Ownership	Area 18% Properties 15%
	.Building Quality	Good 68% Fair 30% Poor 2%
	.Trends in Land Value	. West Lincoln area farmland-sales values steadily 1980 - 1983. . Overall increase of 28% 1980 - 1983

C.3.5

COMMUNITY REGIONAL - LF-3C

FACTOR	INDUSTRIAL	COMMUNITY REGIONAL	
1.Existing Land Use	.Existing Land Use Pattern	Residential Rural/Vacant	1% 99%
2.Proposed & Planned Land Use	.Land Use Designations	Hamlet Community Agricultural Rural Hazard Lands	1% 15% 79% 5%
	.Local Official Plan Policies	. Rural residential clusters - 5 Hamlets. . Substantial rural designation - protective policies for prime agricultural lands; facilities permitted if impacts are minimized.	
	.Regional Official Plan Policies	. Substantial prime agricultural or rural land - protective policies for farmlands; facilities are permitted if impacts are minimized.	
3.Provincial Policies & Plans	.Niagara Escarpment Plan	N/A (not affected)	
	.Parkway Belt West Plan	N/A (not affected)	

TABLE C.4
CANDIDATE SITE DATA MATRICES PRIOR TO BOUNDARY REFINEMENT
SITE - LF-1E

FACTOR	INDICATOR	SITE	
1.Existing Land Use	.Existing Land Use Pattern	Commercial Rural/Vacant	2% 98%
	.Number of Residences	16	
	.Industrial & Commercial Facilities	Commercial Industrial	1 0
2.Proposed & Planned Land Use	.Land Use Designations	Good General Agricultural	100%
	.Approved Dev. Proposals	-	
	.Unapproved Dev. Proposals	-	
	.Vacant Lots of Record	6	
	.Local Official Plan Policies	. Prime agricultural designation - protective policies for farmlands . O.P.A. not required if facilities qualify as "Public Use".	
	.Regional Official Plan Policies	. Prime agricultural designation - protective policies for farmlands; waste facilities permitted if impacts minimized. . O.P.A. not required.	
	.Local Zoning By-laws	Rural Agricultural	100%

C.4.2
SITE - LF-1E

FACTOR	INDICATOR	SITE		
3.Land Use Stability	.Land Sales	0		
	.Dev. Proposals	-		
	.Absentee Land Ownership	Area Properties		33% 16%
	.Building Quality	Good 69%	Fair 25%	Poor 6%
	.Trends in Land Value	-		

C.4.3
SITE VICINITY - LF-1E

FACTOR	INDICATOR	SITE VICINITY	
1.Existing Land Use	.Existing Land Use Pattern	Residential	3%
		Residential Cluster	1%
		Rural/Vacant	92%
		Other	4%
	.Number of Residences	215	
	.Residences per 1,000 ha	92	
	.Residences within 1,000 m	56	
	.Industrial & Commercial Facilities	Commercial	9
		Industrial	0
2.Proposed & Planned Land Use	.Land Use Designations	Industrial	2%
		Neighbourhood Residential	1%
		Rural	25%
		Good General Agricultural	57%
		Hazard Lands	10%
		Open Space	5%
	.Approved Dev. Proposals	-	
	.Unapproved Dev. Proposals	-	
	.Vacant Lots of Record	140	
	.Local Official Plan Policies	. Prime agricultural designation on majority of lands - protective policies for farmlands. . Significant residential neighbourhood (Cook's Mills) included in area - no population target assigned. . Significant industrial lands - general industrial uses permitted.	
	.Regional Official Plan Policies	. Prime agricultural designation - protective policies for farmlands. . No urban lands or development policies.	

C.4.4
SITE VICINITY - LF-1E

FACTOR	INDICATOR	SITE VICINITY	
	.Local Zoning By-laws	Highway Commercial (HC)	0.3%
		Rural Residential (RR1)	0.5%
		Rural Residential 2 (RR2)	2.0%
		Agricultural (RA)	90%
		Rural (R)	6.2%
		Open Space (01)	0.3%
		Public & Private Open Space (02)	0.6%
		Shopping District (C2)	0.1%
3.Land Use Stability	.Land Sales	7	
	.Dev. Proposals	See above	
	.Absentee Land Ownership	Area	34%
		Properties	19%
	.Building Quality	Good 69% Fair 26%	Poor 5%
	.Trends in Land Value	. Insufficient number of farmland sales in 1980 - 1983 period to form a data base on which to establish a trend.	

C.4.5
COMMUNITY REGIONAL - LF-1E

FACTOR	INDUSTRIAL	COMMUNITY REGIONAL	
1.Existing Land Use	.Existing Land Use Pattern	Industrial	6%
		Residential Cluster	2%
		Rural/Vacant	92%
2.Proposed & Planned Land Use	.Land Use Designations	Resort Commercial	1%
		Highway Commercial	1%
		Industrial	14%
		Agricultural	52%
		Rural	25%
		Open Space	3%
		Hazard Lands	4%
	.Local Official Plan Policies	. Significant part of residential designation in Welland (Cook's Mills Residential Neighbourhood). . Substantial general industrial. . Prime agricultural land designation - protective policies for farmlands.	
	.Regional Official Plan Policies	. Significant part of Niagara Falls Urban Area - proposed industrial uses in O.P. . Substantial prime agricultural land with protective policies.	
3.Provincial Policies & Plans	.Niagara Escarpment Plan	N/A (not affected)	
	.Parkway Belt West Plan	N/A (not affected)	

D – APPENDIX TO CHAPTER 4

APPENDIX D

TABLE D.1
REFINEMENT OF SITE BOUNDARIES
DATA MATRICES

Factor/ Indicator		Site/Parcel Option**			
		PI-IN		LF-1E	
		Option 1	Option 2	Option 1	Option 2
Existing Land Use	. Number of residences - site	4	5	8	9
	. Number of residences - site vicinity*	32	38	24	39
	. Commercial facilities - site	1	0	1	1
	. Commercial facilities - site vicinity*	1	2	1	3
	. Land use pattern - - site vicinity	abuts Boyne rural cluster	600 m from Boyne rural cluster	1 750 m from Cook's Mills residential cluster	1 600 m from Cook's Mills residential cluster

---

* Site vicinity refers to 1 000 m study area from site/parcel boundary; otherwise, the standard 2 km site vicinity is utilized.

** No parcel options were used by the land use consultant in the evaluation of LF-3C.

E - APPENDIX TO CHAPTER 5

APPENDIX E

TABLE E.1

RAIL ACCESS OPTIONS
DATA MATRICES

Site	Factor/Indicator	Rail Access Options 1	2	3	4	5
LF-4N	. Number of residences	0	0	1	0	-
	. Commercial facilities	0	0	0	0	-
PI-1N	. Number of residences	0	0	2	2	-
	. Commercial facilities	0	0	0	0	-
LF-3C	. Number of residences	0	0	6	-	-
	. Commercial facilities	0	0	1	-	-
LF-9C	. Number of residences	5	10	13	1	1
	. Commercial facilities	0	1	2	1	0
LF-1E	. Number of residences	0	1	0	0	-
	. Commercial facilities	0	0	0	0	-

F - APPENDICES TO CHAPTER 6

TABLE F.1

PHASE 4A - PRELIMINARY ACCESS ROAD OPTIONS

TO LF-3C

(1) from QEW - south on Vineland Townline Road (Regional Road 24); west on Highway 20; south on Regional Road 27; west on Elcho Road to LF-3C

(2) from QEW - south on Regional Road 18 (Beamsville Road); west on Regional Road 69 (Twenty Mile Road); south on Regional Road 569; south on Highway 20; south on Regional Road 27; west on Elcho Road to LF-3C

(3) from QEW - south on Regional Road 14; south on Regional Road 714; east on Regional Road 73; south on Regional Road 14; south on Regional Road 16 to LF-3C

(4) from QEW - south on Regional Road 18; west on Regional Road 69; south on Highway 20; south on Regional Road 27; west on Elcho Road to LF-3C

(5) from QEW - south on Vineland Townline Road (Regional Road 24); west on Highway 20; west on Regional Road 65 from Bismarck; south on Smithville Road to LF-3C

*(6) from QEW - south on Vineland Townline Road (Regional Road 24); west on Highway 20; west on Regional Road 65 from Bismarck; south on Krick Road to LF-3C

TO LF-9C

*(1) from QEW - south on Vineland Townline Road (Regional Road 24); west on Highway 20 to LF-9C

(2) from QEW - south on Regional Road 18; west on Regional Road 69; south on Regional Road 569; south on Highway 20 to LF-9C

(3) from QEW - south on Regional Road 18; west on Regional Road 69; south on Highway 20; east on Highway 20 to LF-9C

TO LF-1E

(1) from QEW - west on Regional Road 47 (Lyons Creek Road); south on Regional Road 98 (Montrose Road) west on Carl Road to LF-1E

(2) from QEW - west on Regional Road 47 (Lyons Creek Road/Biggar Road); south on Morris Road to LF-1E

(3) from QEW - west on Biggar Road; south on Crowland Road to LF-1E

(4) from QEW - west on Biggar Road; south on Montrose Road; west on Young Road to LF-1E

(5) from QEW - west on Biggar Road; south on Montrose Road; west on Schisler Road (Regional Road 27) to LF-1E

LF-2N/PI-1N

TO PI-1N

*(1) from 401 - south on Fourth Line; west on Britannia Road to PI-1N

(2) from 401 - south on Fourth Line; west on Derry Road; south on Highway 25 to PI-1N

PI-1N to LF-2N

*(1) east on Britannia Road; north on Fourth Line Road; east on Highway 401; north on Highway 10 to LF-2N

(2) west on Britannia Road; north on Tremaine Road; east on Steeles Avenue; north on Highway 25; east on Highway 401; north on Highway 10 to LF-2N

LF-2N/PI-13N

TO PI-13N

*(1) from 401 - south on Fourth Line Road; east on Britannia Road; south on Fifth Line Road to PI-13N

(2) from 401 - south on Fourth Line Road; east on Derry Road; south on Fifth Line Road to PI-13N

(3) from 401 - south on Trafalgar Road; west on Britannia Road; south on Fifth Line Road to PI-13N

PI-13N to LF-2N

(1) north on Fifth Line Road; east on Britannia Road; north on Trafalgar Road (Regional Road 3); east on Highway 401; north on Highway 10 to LF-2N

*(2) north on Fifth Line Road; west on Britannia Road; north on Fourth Line Road; east on Highway 401; north on Highway 10 to LF-2N

(3) north on Fifth Line Road; west on Derry Road; north on Fourth Line Road; east on Highway 401; north on Highway 10 to LF-2N

(4) north on Fifth Line Road; east on Britannia Road; north on Trafalgar Road; east on Derry Road to LF-2N

LF-4N/PI-1N

TO PI-1N

TO PI-1N - [see LF-2N/PI-1N above]

TO LF-4N

*(1) from 401 - south on Fourth Line Road; west on Britannia Road to LF-4N

(2) from 401 - south on Fourth Line; west on Derry Road (Regional Road 25); south on Highway 25 to LF-4N

LF-4N/PI-13N

TO PI-13N - [see LF-2N/PI-13N above]

TO LF-4N - [see LF-4N/PI-1N above]

LF-1E/PI-27E

PI-27E to LF-1E

[same as to LF-1E integrated]

* Denotes preferred access route as selected at completion of Comparative Evaluation of Access Roads.

TABLE F.2
PHASE 4A - PRELIMINARY ACCESS ROAD DATA MATRICES

FACTOR/INDICATOR	ACCESS ROAD OPTIONS (1)	(2)	(3)	(4)	(5)	(6)
TO LF-3C						
EXISTING RESIDENTS						
.Number of res. (local roads)	24	24	0	24	0	0
.Distance through strip res. dev. (km along reg. access roads) (population)	4.5 Vineland (pop. 1,200) 0.2 Bismarck	4.0 Beamsville (pop. 5,000) 1.0 St. Ann's (pop. 75) 0.2 Bismarck (pop. 50)	1.9 Grimsby (pop. 16,000) 2.2 Smithville (pop. 2,000)	4.0 Beamsville 0.2 Bismarck	4.5 Vineland 0.3 Bismarck	4.5 Vineland 0.3 Bismarck
	4.7 km	5.2 km	4.1 km	4.2 km	4.8 km	4.8 km
TO LF-9C	(1)	(2)	(3)			
EXISTING RESIDENTS						
.Number of res.	0	0	0			
.Distance through strip res. dev. (km)	4.5 Vineland	4.0 Beamsville 1.0 St. Ann's 2.0 Hwy 20 strips 0.3 Bismarck	4.0 Beamsville 2.0 Hwy 20 strips 0.3 Bismarck			
	4.5 km	7.3 km	6.3 km			
TO LF-1E	(1)	(2)	(3)	(4)	(5)	
EXISTING RESIDENTS						
.Number of res.	8	2	1	6	8	
.Distance through strip res. dev. (km)	0	0	0	0	0	

FACTOR/INDICATOR	(1)	(2)		
LF-2N/PI-1N TO PI-1N				
EXISTING RESIDENTS				
.Number of res.	17	0		
.Distance through strip res. dev. (km)	0.3 Omagh (pop. 30)	1.4 Milton (pop. 30,000)		
PI-1N TO LF-2N				
EXISTING RESIDENTS				
.Number of res.	17	0		
.Distance trough strip res. dev. (km)	0.3 Omagh	0.5 Steeles Ave. strip		
LF-2N/PI-13N TO PI-13N	(1)	(2)	(3)	
EXISTING RESIDENTS				
.Number of res.	18	1	1	
.Distance through strip res. dev. (km)	0.3 Omagh	0	0.5 Drumquin	
PI-13N TO LF-2N	(1)	(2)	(3)	(4)
EXISTING RESIDENTS				
.Number of res.	1	18	18	1
.Distance through strip res. dev. (km)	0.5 Drumquin (pop. 25)	0	0.3 Omagh	1.3 Meadowvale 0.7 Meadowvale Village 0.5 Drumquin 0.7 Britannia Rd. strip 1.0 Derry Rd. strip 4.2 km

NOTES:

- NUMBER OF RESIDENCES INDICATED FOR LOCAL ROADS ONLY
- DISTANCE THROUGH STRIP RESIDENTIAL DEVELOPMENT INDICATED FOR REGIONAL ROADS ONLY

TABLE F.3
ACCESS ROADS ADDED IN PHASE 4A

LF-1E

TO LF-1E [See Figure 6.3 and Table F.5]

Option 6 - QEW - west on Regional Road 47 - Biggar Road; south on Montrose Road; west on Carl Road; south on Crowland Road to LF-1E

Option 7 - QEW - west on Regional Road 47 - Biggar Road; south on Crowland Road; west on Carl Road to LF-1E

LF-4N/PI-1N

FROM PI-1N TO LF-4N [See Figure 6.9 and Table F.5]

Option 2 - North on First Line; west on Britannia Road to LF-4N

LF-1E/PI-27E

TO LF-1E

- See above

FROM PI-27E TO LF-1E [See Figure 6.11 and Table F.5]

Option 6 - South on Montrose Road; west on Carl Road; south on Crowland Road to LF-1E

Option 7 - West on Biggar Road; south on Crowland Road; west on Carl Road to LF-1E

TABLE F.4

PHASE 4A - COMPARATIVE EVALUATION OF ACCESS ROAD OPTIONS UNDER CONSIDERATION

LF-3C

(1) from QEW - south on Vineland Townline Road (Regional Road 24); west on Highway 20; south on Regional Road 27; west on Elcho Road to LF-3C

*(6) from QEW - south on Vineland Townline Road (Regional Road 24); west on Highway 20; west on Regional Road 65 from Bismarck; south on Krick Road to LF-3C

LF-1E

(1) from QEW - west on Regional Road 47 (Lyons Creek Road/Biggar Road); south on Regional Road 98 (Montrose Road); west on Carl Road to LF-1E

(3) from QEW - west on Regional Road 47 (Lyons Creek Road/Biggar Road); south on Crowland Road to LF-1E

+(4) from QEW - west on Regional Road 47 (Lyons Creek Road/Biggar Road); south on Montrose Road; west on Young Road to LF-1E

+(5) from QEW - west on Regional Road 47 (Lyons Creek Road/Biggar Road); south on Montrose Road; west on Schisler Road (Regional Road 27) to LF-1E

*(6) from QEW - west on Regional Road 47 (Lyons Creek Road/Biggar Road); south on Crowland Road; west on Carl Road to LF-1E

(7) from QEW - west on Regional Road 47 (Lyons Creek Road/Biggar Road); south on Montrose Road; west on Carl Road; south on Crowland Road to LF-1E

LF-4N/PI-1N
PI-1N TO LF-4N

(1) north on Highway 25 (Bronte Road); west on Britannia Road to LF-4N

*(2) north on First Line Road; west on Britannia Road to LF-4N

LF-1E/PI-27E
TO PI-27E

*(1) from QEW - west on Regional Road 47 (Lyons Creek Road/Biggar Road) to PI-27E

(2) from QEW - west on Regional Road 47; north on Regional Road 98 to PI-27E

PI-27E TO LF-1E

o same as LF-1E integrated

---

* Selected as preferred access route

+ Eliminated following refinement of site boundaries

TABLE F.5
PHASE 4A COMPARATIVE EVALUATION OF ACCESS ROADS
DATA MATRICES

FACTOR	INDICATOR	TO LF-3C (1) via Elcho Road	 (6) via Krick Road
		ACCESS ROAD	
1. Existing Land Uses	. Existing Land Use Pattern	Residential 4% Commercial 0% Industrial 1% Cluster 1% Rural/Vacant 92% Other 2%	Residential 4% Commercial 0% Industrial 1% Cluster 1% Rural/Vacant 91% Other 3%
	. Number of Residences	847	833
	. Industrial & Commercial Facilities	Commercial 60 Industrial 4	Commercial 57 Industrial 4
2. Proposed & Planned Land Uses	. Land Use Designations	Rural 81% Open Space/ Hazard 16% Residential 3%	Rural 81% Open Space/ Hazard 16% Residential 3%
	. Approved Dev. Proposals	1 Industrial 1.5 ha; 25 Res. (54 units) 80.84 ha	1 Industrial 1.5 ha; 25 Res. (54 units) 80.84 ha
	. Unapproved Dev. Proposals	1 Residential (700 units) 19.4 ha	1 Residential (700 units) 19.4 ha
	. Vacant Lots of Record	85	89
	. Local Official Plan Policies	. Vineland-total projected pop. of 8,700 . Hamlet Community of Bismarck	. Vineland-total projected pop. of 8,700 . Hamlet Community of Bismarck
	. Regional Official Plan Policies	. Vineland urban area	. Vineland urban area

F.5.2
PHASE 4A COMPARATIVE EVALUATION OF ACCESS ROADS DATA MATRICES

FACTOR	INDICATOR	TO LF-1E ACCESS ROAD OPTIONS						
			(1)	(3)	(4)	(5)	(6)	(7)
1. Existing Land Uses	.Existing Land Use Pattern %	Residential	0	0	0	0	0	0
		Commercial	0	0	0	0	0	0
		Industrial	0	0	0	0	0	0
		Rural/Vacant	97	96	98	94	96	97
		Cluster	0	0	0	0	0	0
		Other	3	4	2	6	4	3
	.Number of Residences		30	27	37	57	27	30
	.Industrial & Commercial Facilities	Commercial	1	1	1	2	1	1
		Industrial	0	0	0	0	0	0
2. Proposed & Planned Land Uses	.Land Use Designations %	Agricultural	79	83	79	76	83	79
		Open Space/ Hazard	13	7	15	19	7	13
		Industrial	8	10	6	5	10	8
	.Approved Dev. Proposals		-	-	-	-	-	-
	.Unapproved Dev. Proposals		-	-	-	-	-	-
	.Vacant Lots of Record		15	17	14	30	17	15
	.Local Official Plan Policies		No hamlets or residential designated on route					
	.Regional Official Plan Policies		No residential areas designated					

F.5.3
PHASE 4A COMPARATIVE EVALUATION OF ACCESS ROADS
DATA MATRICES

FACTOR	INDICATOR	ACCESS ROAD	LF-4N/PI-1N PI-1N TO LF-4N (1) via Hwy. 25	 (2) via First Line
1.Existing Land Uses	.Existing Land Use Pattern	Rural/Vacant	100%	100%
	.Number of Residences		20	9
	.Industrial & Commercial Facilities	Commercial Industrial	2 1	1 0
2.Proposed & Planned Land Use	.Land Use Designations	Agricultural Open Space/Hazard	92% 8%	88% 12%
	.Approved Dev. Proposals		-	-
	.Unapproved Dev. Proposals		-	-
	.Vacant Lots of Record		11	9
	.Local Official Plan Policies		.Agricultural route	.Agricultural route
	.Regional Official Plan Policies		.No Hamlets or urban residential designated	.No Hamlets or urban residential designated

F.5.4
PHASE 4A COMPARATIVE EVALUATION OF ACCESS ROADS DATA MATRICES

FACTOR	INDICATOR	LF-1E/PI-27E TO PI-27E ACCESS ROAD			
		(1) Biggar Entrance		(2) Montrose Entran	
1.Existing Land Uses	.Existing Land Use Pattern	Residential	0%	Residential	0%
		Commercial	0%	Commercial	0%
		Industrial	0%	Industrial	0%
		Cluster	0%	Cluster	0%
		Rural/Vacant	94%	Rural/Vacant	94%
		Other	6%	Other	6%
	.Number of Residences	15		15	
	.Industrial & Commercial Facilities	Commercial	1	Commercial	1
		Industrial	0	Industrial	0
2.Proposed & Planned Land Uses	.Land Use Designations	Agricultural	66%	Agricultural	66%
		Open Space/ Hazard	14%	Open Space/ Hazard	14%
		Industrial	20%	Industrial	20%
	.Approved Dev. Proposals	-		-	
	.Unapproved Dev. Proposals	-		-	
	.Vacant Lots of Record	10		10	
	.Local Official Plan Policies	.Route through industrial and agricultural areas		.Route through industrial and agricultural areas	
	.Regional Official Plan Policies	.No residential areas designated		.No residential areas designated	

F.5.5
PHASE 4A COMPARATIVE EVALUATION OF ACCESS ROADS DATA MATRICES

FACTOR	INDICATOR	LF-1E/PI-27E PI-27E TO LF-1E ACCESS ROAD OPTIONS						
			(1)	(3)	(4)	(5)	(6)	(7)
1.Existing Land Uses	.Existing Land Use Pattern %	Residential	0	0	0	0	0	0
		Commercial	0	0	0	0	0	0
		Industrial	0	0	0	0	0	0
		Rural/Vacant	99	99	100	95	100	99
		Cluster	0	0	0	0	0	0
		Other	1	1	0	5	0	1
	.Number of Residences		19	26	9	46	9	19
	.Industrial & Commercial Facilities	Commercial	1	2	0	4	0	1
		Industrial	0	0	0	0	0	0
2.Proposed & Planned Land Uses	.Land Use Designations %	Agricultural	79	79	92	76	92	79
		Open Space/ Hazard	13	15	8	19	8	13
		Industrial	8	6	0	5	0	8
	.Approved Dev. Proposals		-	-	-	-	-	-
	.Unapproved Dev. Proposals		-	-	-	-	-	-
	.Vacant Lots of Record		13	12	10	22	10	13
	.Local Official Plan Policies		No hamlets or residential designated on route					
	.Regional Official Plan Policies		No residential areas designated					

G - APPENDIX TO CHAPTER 7

TABLE G.1
PHASE 4A - LOCATION OF PHYSICAL/CHEMICAL TREATMENT PLANT
FOR PARTIALLY INTEGRATED SITING OPTIONS
DATA MATRIX

FACTOR/INDICATOR	SITING OPTIONS					
	LF-4N/PI-1N		LF-4N/PI-13N		LF-1E/PI-27E	
	OPTION 1*	OPTION 2**	OPTION 1	OPTION 2	OPTION 1	OPTION 2
1. Existing Land Use - Site Vicinity						
.Number of Residenes (1000 m)***	38	64	59	85	36	74
.Commercial Facilities	7	12	14	19	6	13
2. Planned & Proposed Land Use - Site						
.Land Use Designation	.physical/chemical plant and incinerator located on agricultural lands - no difference		.physical/chemical plant and incinerator located on agricultural lands - no difference		.physical/ chemical plant & incinerator located on 100% ind. lands (PI-27E)	.physical/ chemical plant located on 100% agricult. lands (LF-1E)
3. Planned & Proposed Land Use - Site Vicinity						
.Land Use Designation	.physical/chemical plant & incinerator located in rural/agricultural area - no difference		.physical/chemical plant & incinerator located in rural/agricultural area - no difference		.physical/ chemical plant & incinerator located near compatible ind. des. (44% ind.)	.physical/ chemical plant located in agric. area-only 2% ind.
4. Transportation Impact Index - Access Roads						
.Impact Index	245.383	251.630	283.551	280.043	40.105	44.880

* Option 1 - Physical/chemical plant located with incinerator, landfill separate
** Option 2 - Physical/chemical plant located with landfill, incinerator separate
*** Number of Residences located within 1000 m of site containing either or both the physical/chemical plant and the incinerator

APPENDIX H

TABLE H.1 - COMPARATIVE EVALUATION OF SITING OPTIONS- - SCREENING OF INDICATORS

FACTOR/ STUDY AREA	INDICATOR	REASON FOR SCREENING
SITE		
Proposed and Planned Land Use	.approved development proposals	.No occurrences of this indicator
	.unapproved development proposals	.No occurrences of this indicator
	.local zoning by-law - commercial	.Insignificant data differentiation between siting options (less than 1%)
Land Use Stability	.development proposals	.No occurrences of this indicator
	.trends in land value	.No detailed sales data available for this study area
SITE VICINITY		
Proposed and Planned Land	.approved development proposals	.Limited number of approvals - insignificant impacts (maximum 2 additional residences)
	.unapproved development proposals	.Limited number of proposals
Land Use Stability	.development proposals	.Insignificant impacts and data differentiation between siting options
COMMUNITY AND REGIONAL AREA		
Existing Land Use	.land use pattern - commercial	.Limited data emerged for commercial land uses - negligible impacts anticipated
Proposed and Planned Land	.land use designations - commercial	.Limited data emerged for commercial designations - negligible impacts anticipated
ACCESS ROADS		
Existing Land Use	.number of industrial facilities	.Insignificant data results - maximum number on any route was 4, most routes had 0 or 1
Proposed and Planned Land Use	.approved development proposals	.Insufficient data available to facilitate adequate comparison .Very few approved proposals except along common route to LF-3C and LF-9C, which do not affect the ranking of options to LF-3C

TABLE H.2 - COMPARATIVE EVALUATION OF SITING OPTIONS RANKING AND WEIGHTING OF INDICATORS

H.2.1 - SITE

RANKING LEVEL	FACTOR/INDICATOR	WEIGHTING	RATIONALE
	EXISTING LAND USE		
HIGH	. Number of Residences	10	. Most explicit indicator of impact on residents through expropriation
MEDIUM	. Number of Commercial Facilities	3	. Most explicit indicator of impact on businesses but considerably less critical than potential impacts on residences due to compensatibility of businesses
MODERATELY LOW	. Existing Land Use Pattern	2	. Reflects existing land use conditions on site, but may have little impact significance since key land use constraints (residential and commercial) reflected by other indicators
LOW	. Number of Industrial Facilities	1	. Most explicit indicator of impact on industries which, though perhaps compatible with OWMC facilities, may also require expropriation. Low weighting, reflects relative absence to industrial facilities on site
	PROPOSED AND PLANNED LAND USE		
HIGH	. Land Use Designations	10	. Key indicator representing land use intentions of municipality, though may not occur in short-to-mid-term - possibility of long-term mitigation of planned land uses; commercial designations most severely impacted due to absence of residential designations
MEDIUM	. Vacant Lots of Record	3	. Quantitative measure of existing potential for immediate residential development without further planning approvals, but considerably less critical than land use designations
MEDIUM	. Local Official Plan Policies	2	. Less quantitative and more qualitative indicator of local municipalities' land use intentions - addresses policies not covered by land use designations
MEDIUM	. Regional Official Plan Policies	2	. Similar to local policies, but at higher level of government and further removed from local approval process

Page 2 - Cont'd

RANKING LEVEL	FACTOR/INDICATOR	WEIGHTING	RATIONALE
LOW	. Local Zoning By-laws	1	. Indicates permitted uses and restrictions on land use - mitigation possible through rezoning. Low weighting assigned as impacts usually expressed by official plan designations since zoning must reflect official plan.
	LAND USE STABILITY		
HIGH	. Absentee Land Ownership	6	. Best indication of commitment of land owners to maintain existing uses in future; may indicate land speculation
MEDIUM	. Land Sales	3	. Generally low volumes of land sales in site areas - limited indicator for land use stability
LOW	. Building Quality	1	. Most subjective assessment of land use stability based on observed building quality

H.2.2 - SITE VICINITY

RANKING LEVEL	FACTOR/INDICATOR	WEIGHTING	RATIONALE
	EXISTING LAND USE		
HIGH	. Number of Residences	10	. Most explicit indicator (and sub-indicator) of potentially disruptive impacts on residents as a result of incompatible land uses - includes weighted average of following two sub-indicators
	. Density of Residences Per 1000 ha	-	. This sub-indicator accounts for variations in land area of site vicinities to indicate density of residences
	. Number of Residences within 1000 m of site	-	. This sub-indicator identifie residences in closest proximity to facilities - area of highest potential impact
MEDIUM	. Number of Commercial Facilities	3	. Most explicit indicator of impact on businesses, but considerably less critical than potential impacts on residences due to compensatibility of businesses
MODERATELY LOW	. Existing Land Use Pattern	2	. Reflects existing land use conditions in site vicinity - Phase 3B screening has eliminated major concerns in immediate vicinity of sites; other key land use constraints (residential and commercial) reflected by other indicators
LOW	. Number of Industrial Facilities	1	. Most explicit indicator of impact on industries - heavy industries are generally compatible with OWMC facilities, but prestige industries may not be. Low weighting reflective of smal numbers of industrial facilities
	PROPOSED AND PLANNED LAND USE		
HIGH	. Land Use Designations	10	. Key indicator representing future land use plans of municipality, though may not occur in short-to mid-term - possibility of long-term mitigation of planned land uses; residential designations most severely impacted by incompatible uses
MEDIUM	. Vacant Lots of Record	2	. Quantitative measure of existing potential for immediate residential development without further planning approvals, but considerably less critical than land use designations due to limited numbers of such lots

RANKING LEVEL	FACTOR/INDICATOR	WEIGHTING	RATIONALE
MEDIUM	. Local Official Plan Policies	2	. Less quantitative and more qualitative indicators of local municipalities' land use intentions - addresses policies not covered by land use designations
MEDIUM	. Regional Official Plan Policies	2	. Similar to local policies, but at higher level of government and further removed from local approval process
LOW	. Local Zoning By-laws	1	. Indicates permitted uses and restrictions on land use - mitigation possible through rezoning. Low weighting assigned as impacts usually expressed by official plan designations since zoning must reflect official plan.
	LAND USE STABILITY		
HIGH	. Absentee Land Ownership	6	. Best indication of commitment of land owners to maintain existing uses in future; may indicate land speculation
MEDIUM	. Land Sales	3	. Land sales in site vicinity are good indicator of land use stability over time, but less significant than existing and planned land uses and absentee ownership
MODERATELY LOW	. Trends in Land Value	2	. Values affected by many factors - less confidence in data as indicator of stability
LOW	. Building Quality	1	. Most subjective assessment of land use stability based on observed buildng quality
	PROVINCIAL POLICIES AND PLANS		
LOW	. Parkway Belt West Plan	1	. Affects more siting options than Niagara Escarpment Plan, but potential impacts not as widespread as for local or regional official plan policies; low assessed impact potential
LOW	. Niagara Escarpment Plan	1	. Impacts limited to only a few siting options - generally protective of Escarpment lands but not necessarily prohibitive of OWMC facilities; ranked and weighted equally with Parkway Belt West Plan

H.2.3 - COMMUNITY AND REGIONAL AREA

RANKING LEVEL	FACTOR/INDICATOR	WEIGHTING	RATIONALE
	EXISTING LAND USE		
	. Existing Land Use Pattern	-	. Reflects existing land use conditions in regional area - indicator of impacts on existing land use receptors; no weighting assigned as only one indicator used
	PROPOSED AND PLANNED LAND USES		
HIGH	. Land Use Designations	10	. Key indicator of future land use intentions of municipality, though may not occur in short- to mid-term - possibility of long-term mitigation of planned land uses; residential designations most severely impacted by incompatible uses
LOW	. Local Official Plan Policies	2	. Less quantitative and more qualitative indicator of local municipalities' land use intentions - addresses policies not covered by land use designations
LOW	. Regional Official Plan Policies	2	. Similar to local policies, but at higher level of government and further removed from local approval process
	PROVINCIAL PLANNING POLICIES		
LOW	. Parkway Belt West Plan	1	. Affects more siting options than Niagara Escarpment Plan, but potential impacts not as widespread as for local or regional official plan policies; low assessed impact potential
LOW	. Niagara Escarpment Plan	1	. Impacts limited to only a few siting options - generally protective of Escarpment lands but not necessarily prohibitive of OWMC facilities; ranked and weighted equally with Parkway Belt West Plan

H.2.4 - ACCESS ROADS

RANKING LEVEL	FACTOR/INDICATOR	WEIGHTING	RATIONALE
	EXISTING LAND USE		
HIGH	. Number of Residences	10	. Greatest disruptive impacts from truck traffic anticipated to be residences along access routes
MEDIUM	. Number of Commercial Facilities	3	. Impacts on commercial uses potentially not as critical as residential impacts due to commercial reliance on vehicular traffic
LOW	. Existing Land Use Pattern (Residential)	2	. Varies by length of access road options, and reflects residential concentrations enroute, but generally accounted for by number of residences indicator
	PROPOSED AND PLANNED LAND USE		
HIGH	. Land Use Designations	10	. Key indicator representing future land use plans of municipality, though may not occur in short-to mid-term - possibility of long-term mitigation of planned land uses; residential designations most severely impacted by non-residential traffic
MEDIUM	. Unapproved Development Proposals	5	. Indicate strong intent to develop lands - development may be imminent, although less confidenc in data due to possibility of refusal; relatively high weighting due to large size of unapproved development proposals
LOW	. Vacant Lots of Record	3	. Quantitative measure of existing potential for immediate residential development without further planning approvals, but less critical than designations or development proposals due to limited number of such lots
LOW	. Local Official Plan Policies	2	. Less quantitative and more qualitative indicator of local municipalities' land use intentions - addresses policies not covered by land use designations
LOW	. Regional Official Plan Policies	2	. Similar to local policies, but at higher level of government and more removed from local approval process

TABLE H. 3 - COMPARATIVE EVALUATION OF SITING OPTIONS - SCALING OF INDICATORS

TABLE H.3.1 - SITE AREA

FACTOR/ INDICATOR	LEVEL OF CONSTRAINT					RATIONALE
	LOW	MODERATELY LOW	MEDIUM	MODERATELY HIGH	HIGH	
EXISTING LAND USE						
.Land Use Pattern						
%Commercial	0%	-	>0%	-	-	. Most sites used for rural/agricultural purposes . Other uses have few occurrences and small range (0-3%) . Residential uses (except rural residences) excluded during Phase 3B.
%Industrial	0%	-	>0%	-	-	
.Number of Residences	0-3	4-7	8-11	12-14	15+	. Range from 3 to 16 . Clustering of data occurs in medium and high ranges (no moderately high totals) . Five (5) levels of constraint used due to significance of indicator
.Number of Commercial Facilities	0	-	>0	-	-	. Few commercial facilities - range from 0 to 1 - no distinct break-points.
.Number of Industrial Facilities	0	-	>0	-	-	. Industrial facilities on site represent constraint to facility siting . Few occurrences (1 only).

FACTOR/ INDICATOR	LEVEL OF CONSTRAINT LOW	MODERATELY LOW	MEDIUM	MODERATELY HIGH	HIGH	RATIONALE
PROPOSED AND PLANNED LAND USE						
.Land Use Designations	.Industrial (General/ Heavy)	Industrial with Agricultural	Sanitary Landfill	.Agricultural with Sanitary landfill	Agric-ultural	. No residential or commercial designations on site . Agricultural is key constraint (high) - offset by other designations to varying degrees . Sanitary landfill designation considered to be for landfill purposes, but may not permit treatment facilities (moderate constraint) . Siting preference for facilities on industrial lands, though less critical for landfill
.Vacant Lots of Record	0-6	-	7+	-	-	. Range from 1 to 9 . A cluster of data occurs at low end of range.
	LOW		MEDIUM		HIGH	
.Local O.P. Polices (only 3 levels of constraint apply)	.Policies permitting general or heavy industrial development .Policies permitting waste treatment and and disposal facilities .OPA not required		.Policies protective of agricultural land but permitting waste facilities provided impacts minimized .Policies permitting industry on certain agricultural land .OPA may not be required		.Policies permitting urban residential and/ or commercial growth or dev. .Strongly protective policies for prime agricultural lands .Anti-toxic waste treatment or disposal policies	. Urban residential or commercial growth policies represent highest level of constraint. . General or heavy industrial development policies represent siting opportunity. . Agricultural preservation policies represent high constraint, unless provisions for public uses included (moderate constraint). . Permissive policies or absence of policies dealing with waste treatment facilities are potential opportunities - anti-waste treatment policies are high constraint.
.Regional O.P.	.Same as above		.Same as above		.Same as above	.Same as above

FACTOR/ INDICATOR	LEVEL OF CONSTRAINT LOW	MODERATELY LOW	MEDIUM	MODERATELY HIGH	HIGH	RATIONALE
.Local Zoning By-laws	Industrial	Industrial with Agricultural	Sanitary Landfill	Agricultural with sanitary landfill	Agricultural	. Residential zones excluded during 3B screening . Agricultural zones represent some degree of constraint (moderate) unless they permit general industrial uses (low constraint).* . Sanitary landfill zoning may permit treatment facilities (moderate constraint)
LAND USE STABILITY						
.Land Sales (1983-1984)	>0	-	0	-	-	. Very few land sales - range from 0 to 2 . More land sales represents lower level of stability in area - possibly lesser constraint to facility siting.
.Absentee land ownership .%Area	80%+	60-79%	40-59%	20-39%	0-19%	. Percentages range from 11 to 86% of site areas . Data generally dispersed throughout range with minor clustering at medium level
.Building Quality	LOW	MODERATELY LOW	MEDIUM	MODERATELY HIGH	HIGH	
%Good	0-59%	-	60-79%	-	80%+	. Percentage of "Good" quality buildings ranges from 59 to 100% of site area. . Clustering occurs at medium and high ends . Percentage of "Poor" quality buildings range from 0 to 20%, with most at low end (highest constraint)
%Poor	20%+	-	10-19%	-	0-9%	

*NOTE: Industrial uses permitted under Rural Agricultural zoning on certain lands.

TABLE H.3.2 - SCALING OF INDICATORS - SITE VICINITY

FACTOR/ INDICATOR	LEVEL OF CONSTRAINT					RATIONALE
	LOW	MODERATELY LOW	MEDIUM	MODERATELY HIGH	HIGH	
EXISTING LAND USE						
.Land Use Pattern						
%Industrial	>0%	-	0%	-	-	. Very few industrial uses - most site vicinities have no industrial lands
%Residential	0%	1%	2-3%	4%	5%+	. Residential uses range from 0 to 6% (aggregated percentages) with no clear breaks; some clustering in middle to high range
%Commercial	0%	-	>0%	-	-	. Few commercial uses, ranging to 2% of area (aggregated percentages)
.Number of Residences (as subindicators)	0-99	100-149	150-199	200-249	250+	. Numbers range from 75 to 302 residences . Natural clustering occurs in mid-range
.Density of Residences Per 1000 ha (subindicators)	0-44	45-59	60-74	75-89	90+	. Density ranges from 39 to 92 residences per 1000 hectares . Minor cluster occurs in middle range
.Number of residences within 1000 m of site (subindicator)	0-29	30-49	50-69	70-79	80+	. Minor clustering occurs in the medium range . Additional break-points identified due to significance of subindicator
.Number of Commercial Facilities	0-9	-	10-15	-	16+	. Numbers range from 4 to 20 with clusters occurring in low and medium ranges

FACTOR/ INDICATOR	LEVEL OF CONTRAINT					RATIONALE
	LOW	MODERATELY LOW	MEDIUM	MODERATELY HIGH	HIGH	
.Number of Industrial Facilities	10+	-	1-9	-	0	. Numbers range from 0 to 11, most clustered at low end
PROPOSED AND PLANNED LAND USE						
.Land Use Designations .Agricultural	<60%	-	>60%	-	-	. Percentages by site vicinity range from 55% to 88% - break-point recognizes clustering of data in mid-range
.Residential	0%	-	1%+	-	-	. Percentages range between 0 and 1% break-point
.General Industrial	6%+	-	1-5%	-	0%	. Percentages range from 0 to about 23% of combined site vicinity - most clustered at 0
.Commercial	0%	-	>0%	-	-	. Very few occurrences - most have no commercial designations - break-point at 0
.Vacant Lots of Record	0-29	30-59	60-89	90-119	120+	. Numbers range from 23 to 170 . Natural cluster occurs in medium range - . Natural break-points reflected

FACTOR/ INDICATOR	LEVEL OF CONSTRAINT LOW	MEDIUM	HIGH	RATIONALE
.Local O.P. Policies	.Policies permitting general or heavy industrial dev. .Policies permitting waste treatment and disposal facilities without amendment	.Policies protective of agricultural land but permitting waste facilities if impacts minimized .Policies permitting industry on certain agricultural land .Policies permitting infilling of rural residential clusters .OPA may not be required	.Policies permitting urban residential and/or commercial growth or dev. .Strongly protective policies for prime agricultural lands .Anti-toxic waste treatment or disposal policies .Environmental Assessment required by municipality	. Urban residential or commercial growth policies represent highest level of constraint . General or heavy industrial development policies represent best opportunity (or lowest level of constaint) . Agricultural preservation policies represent high constraint unless provisions for public uses included (moderate constraint) . Permissive policies or absence of policies dealing with waste treatment facilities are potential opportunities - anti-toxic waste treatment policies are high constraint. . Infilling of rural residential clusters is moderate constraint . Requirements for environmental assessments may be high constraint.
.Regional O.P. Polices	.Same as above	.Same as above	.Same as above	. Same as above

	LEVEL OF CONSTRAINT					
FACTOR/ INDICATOR	LOW	MODERATELY LOW	MEDIUM	MODERATELY HIGH	HIGH	RATIONALE
.Local Zoning By-laws						
%Residential	0%	-	>0%	-	-	. Residential percentages range between 0 and 3% - no clear break-point - 0 used as break-point
%Commercial	0%	-	>0%	-	-	. Commercial percentages range from 0 and 3% - no clear break-points - 0 used as break-point
%Agricultural	<75%	-	>75%	-	-	. Percentage range between 60% and 99%, natural break-point at about 75%
%General/Heavy Industrial	10%+	-	0-9%	-	-	. General/heavy industrial percentages range from 0 to about 15% of combined site vicinity - clustering occurs at bottom end of range - break-point near top
%Prestige Industrial	0%	-	1-4%	-	5%+	. Prestige industrial percentages range from 0 to about 9% - clustering occurs at bottom end - break-points determined at top and bottom
.Land Sales (1983-1984)	21+	-	11-20	-	0-10	. Volume of sales ranges from 7 to 21 . Clusters at bottom end - break-points . Reflects natural break-points
.Absentee Land Ownership % Area	60+	45-59%	30-44%	15-29%	0-14%	. Percentages range from 11 to 80% . Largest cluster occurs at low end, (i.e., highest percentage of absentee ownership) . Break-points indicate best distribution/natural breaks and reflect importance of this indicator.

FACTOR/ INDICATOR	LEVEL OF CONSTRAINT LOW	MODERATELY LOW	MEDIUM	MODERATELY HIGH	HIGH	RATIONALE
.Building Quality %Good	-	-	0-74%	-	75%	. Percentages range from 68 to 89% . Clusters occur at low and high ends . Natural break-point indicated
.Trends in Land Value	.Large fluctuation in values - signs of instability and speculation in land	-	.No discernable trend	-	.Steadily rising values - no severe sales price fluctuations	. Large fluctuation in value represent instability likely due to development speculation . Steadily rising values without major fluctuations indicate stability in area

PROVINCIAL POLICIES AND PLANS	LOW	MEDIUM	HIGH	RATIONALE
.Niagara Escarpment Plan	.Industrial uses permitted .Complementary use area (transportation corridors)	.Escarpment protection area .Complementary use area (public and open space)	.Minor settlement area	. Niagara Escarpment Plan affects limited number of siting options - generally open space and complementary use area, some minor settlements. . Transportation uses considered to be siting opportunity . No assignment of constraints given to sites not affect by NEP.
.Parkway Belt West Plan	.Utility and Transportation uses	.Public and open space uses		. Parkway Belt West Plan affects several siting options, generally for public and open space uses (moderate constraint) and utility and transportation uses (low constraint).

TABLE H.3.3 - SCALING OF INDICATORS - COMMUNITY AND REGIONAL AREA

FACTOR/ INDICATOR	LEVEL OF CONSTRAINT LOW	MODERATELY LOW	MEDIUM	MODERATELY HIGH	HIGH	RATIONALE
EXISTING LAND USE						
.Land Use Pattern %Residential	0-2%	-	3-7%	-	8%+	. Residential land uses ranged from 1 to about 12% (aggregated totals)* of study areas with clustering in low and medium ranges
%Industrial	5%+	-	1-4%	-	0%	. Industrial land uses ranged from 0 to about 8% (aggregated totals) with most at low end
PROPOSED AND PLANNED LAND USE						
.Land Use Designations %Residential	0-2%	-	3-5%	-	6%+	. Residential percentages range from 0 to about 8% of aggregated totals . Clusters at high and low levels
%Industrial	10%+	-	1-5%	-	0%	. Industrial designation ranges from 0 to about 19% of combined study areas, with a group clustered at low end and a few at high end

* NOTE: "aggregated totals" are combined percentages of particular land use for each site

FACTOR/ INDICATOR	LEVEL OF CONSTRAINT LOW	 MEDIUM	 HIGH	RATIONALE
.Local O.P. Policies	.Policies permitting general or heavy industrial development .Policies permitting waste disposal facilities without amendment	.Policies protective of agricultural lands .Waste facilities permitted if impacts minimized residential clusters are designated and infilling permitted	.Policies permitting urban residential and/or commercial growth or development .Anti-toxic waste treatment or disposal policies	. Urban residential or commercial growth policies represent highest level of contraint. . General or heavy industrial development policies represent siting opportunity. . Agricultural preservation policies represent moderate constraint . Policies permissive of waste treatment facilities are potential opportunities; anti-waste treatment policies are high constraint. . Trade-offs between certain policies (i.e., residential vs. industrial) may result in moderately low or moderately high constraint levels
.Regional O.P. Policies	.Same as above	.Same as above	.Same as above	. Same as above
PROVINCIAL POLICIES AND PLANS				
.Niagara Escarpment Plan	.Industrial uses permitted .Complementary use areas (transportation corridors)	.Escarpment Protection Area .Complementary use area (public and open space)	.Minor settlement area	. Niagara Escarpment Plan affects limited number of siting options-generally open space and complementary use area, some minor settlements. . transportation uses considered to be siting opportunity . No assignment of constraints given to sites which are not affected by N.E.P.
.Parkway Belt West Plan	.Utility and Transportation Uses	.Public and open space uses	.-	. Parkway Belt West Plan affects several siting options, generally for public and open space uses (moderate constraint) and utility and transportation uses (low constraint)

TABLE H.3.4
SCALING OF INDICATORS - ACCESS ROADS

FACTOR INDICATOR	LEVEL OF CONSTRAINT					RATIONALE
	LOW	MODERATELY LOW	MEDIUM	MODERATELY HIGH	HIGH	
EXISTING LAND USE						
.Land Use Pattern -Residential*	0-2	-	3-4	-	5+	. Data range from 0 to about 8% . Slight clustering of data at high and low ends
.Number of Residences*	0-99	-	100-499	-	500+	. Wide range from 27 to 833 . Data clustered in three distinct groups at low, moderate and high ends
.Number of Commercial Facilities*	0-9	-	10-29	-	30+	. Wide range from 1 to 59 . Data clustered in three distinct grouping at low, moderate and high ends
PROPOSED AND PLANNED LAND USE						
.Land Use Designations -Residential*	0%	1-2%	-	3-5%	6%+	. Data range from 0 to about 8% . Data clustered at 3 levels
-General/Heavy Industrial*	>0	-	0	-	-	. Data range from 0 to 10% . Several options at 0; small cluster at high end; 0 utilized as break-point

FACTOR/ INDICATOR	LEVEL OF CONSTRAINT LOW	MODERATELY LOW	MEDIUM	MODERATELY HIGH	HIGH	RATIONALE
.Unapproved Development Proposals (Residential Units)	0-499	-	500-999	-	1000+	. Limited number of proposals, but significant sizes
.Vacant Lots of Record	0-29	-	30-59	-	60+	. Wide range from 17 to 89 - significant grouping at high end of scale
.Local O.P. Policies	.Policies promoting general or heavy industrial development		.Policies protecting agricultural lands and rural residential clusters .Policies to ensure compatibility of public utility uses with existing land uses, particularly on non-prime agricultural lands		.Policies promoting urban residential and/ or commercial growth or development	. Urban residential or commercial growth policies represent highest level of constraint . General or heavy industrial development policies represent siting opportunity . Agricultural preservation policies or permitting public uses, represent moderate constraints . Trade-offs between residential vs. industrial development policies or between agricultural protection and urban growth policies may result in moderately low or moderately high levels of constraint
.Regional O.P. Policies	.Same as above		.Same as above		.Same as above	. Same as above

TABLE H.4 - COMPARATIVE EVALUATION OF SITING OPTIONS - SUMMARY OF SITING OPTION RATINGS

TABLE H.4.1 - SITE AREA

SITE/INDICATOR	RATING	RATIONALE
LF-3C		
.Existing Land Use Pattern		
%Commercial	L	. No commercial land uses
%Industrial	L	. No industrial land uses
.Number of Residences	L-M	. Some residences on site
.Number of Commercial Facilities	L	. No commercial facilities on site
.Number of Industrial Facilities	L	. No industrial facilities on site
.Land Use Designations	H	. Mainly Rural designation - equivalent to agricultural designation.
.Vacant Lots of Record	L	. Only 1 vacant lot on site
.Local Official Plan Policies	M-H	. Prime agricultural lands, but facility may be permitted if impacts minimized and O.P.A. approved.
.Regional Official Plan Policies	M-H	. Prime agricultural lands, but facility may be permitted if impacts minimized; no O.P.A. required.
.Local Zoning By-laws	H	. Entirely agricultural zoning
.Land Sales	M	. No land sales on site-indicates stability
.Absentee Land Ownership % of Area	H	. Low percentage of area under absentee ownership - owners/residents committed to area.
.Building Quality		
%Good	H	. High percentage of buildings in good condition - stable level of investment in area
%Poor	L	. Comparatively high percentage of poor quality buildings-possible sign of instability, but limited sample size

SITE/INDICATOR	RATING	RATIONALE
LF-9C		
.Existing Land Use Pattern		
%Commercial	L	. No commercial land uses
%Industrial	L	. No industrial land uses
.Number of Residences	L	. Few residences on site
.Number of Commercial Facilities	L	. No commercial facilities on site
.Number of Industrial Facilities	L	. No industrial facilities on site
.Land Use Designations	H	. Mainly rural designation-equivalent to agricultural designation
.Vacant Lots of Record	L	. Only 1 vacant lot on site
.Local Official Plan Policies	M-H	. Prime agricultural lands, but facility may be permitted if impacts minimized and OPA approved.
.Regional Official Plan Policies	M-H	. Prime agricultural lands, but facility may be permitted if impacts minimized; no OPA required.
.Local Zoning By-laws	H	. Entirely agricultural zoning
.Land Sales	M	. No land sales on site - indicates stability.
.Absentee Land Ownership % of Area	M	. Moderate percentage of area under absentee ownership - sign of potential instability
.Building Quality		
%Good	H	. All buildings in good condition - stable levels of investment in area
%Poor	H	. No buildings in poor condition.

Page 3 - Table H.4.1

SITE/INDICATOR	RATING	RATIONALE
LF-1E		
.Existing Land Use Pattern		
%Commercial	M	. Some commercial land uses on site
%Industrial	L	. No industrial land uses
.Number of Residences	H	. Substantial number of residences on site
.Number of Commercial Facilities	L	. One commercial facility on site
.Number of Industrial Facilities	L	. No industrial facilities on site
.Land Use Designations	H	. Entirely agricultural designation
.Vacant Lots of Record	M	. Some vacant lots on site
.Local Official Plan Policies	M	. Prime agricultural lands with protective policies - O.P.A. may not be required if facility qualifies as public use
.Regional Official Plan Policies	M	. Prime agricultural lands, but facility permitted if impacts minimized; no O.P.A. required
.Local Zoning By-laws	H	. Entirely agricultural zoning
.Land Sales	M	. No land sales on site - indicates stability
.Absentee Land Ownership % of Area	M-H	. Moderately low percentage of area under absentee ownership - owners/residences committed to area (moderately high constraint)
.Building Quality		
%Good	M	. Moderate percentage of buildings in good condition - sign of moderate stability in area
%Poor	H	. Low percentage of buildings in poor condition - sign of stability

Page 4 - Table H.4.1

SITE/INDICATOR	RATING	RATIONALE
LF-4N/PI-1N		
.Existing Land Use Pattern		
%Commercial	L	. No commercial land uses
%Industrial	L	. No industrial land uses
.Number of Residences	M	. Moderate number of residences on combined site
.Number of Commercial Facilities	L	. No commercial facilities on site
.Number of Industrial Facilities	L	. No industrial facilities on site
.Land Use Designations	M-H	. Largely agricultural designation (56%) with sanitary landfill designation (32%) - may be considered as industrial for landfill purposes, but may not permit treatment facilities
.Vacant Lots of Record	M	. Some vacant lots on combined site
.Local Official Plan Policies	H	. Protective policies for agricultural lands - policies for sanitary landfill designation on LF-4N prohibit toxic wastes.
.Regional Official Plan Policies	H	. Strongly protective policies for prime agricultural lands; OPA's may not be required.
.Local Zoning By-laws	M-H	. Sanitary landfill and agricultural zoning
.Land Sales	M	. No land sales on site - indicates stability.
.Absentee Land Ownership % of Area	L-M	. Relatively high percentage of lands under absentee ownership - sign of instability (moderately low constraint)
.Building Quality		
%Good	H	. High percentage of buildings in good condition - indicates stability
%Poor	M	. Moderate percentage of buildings in poor condition - indicates some degree of instability.

Page 5 - Table H.4.1

SITE/INDICATOR	RATING	RATIONALE
LF-4N/PI-13N		
.Existing Land Use Pattern		
%Commercial	L	. No commercial land uses
%Industrial	L	. No industrial land uses
.Number of Residences	M	. Moderate number of residences combined site
.Number of Commercial Facilities	L	. No commercial facilities on s
.Number of Industrial Facilities	L	. No industrial facilities on sit
.Land Use Designations	M-H	. Largely agricultural designatio (64%) with sanitary landfill designation (31%) - may be considered as industrial for landfill purposes, but may no permit treatment facilities
.Vacant Lots of Record	L	. Few vacant lots on site
.Local Official Plan Policies	M-H	. protective policies for agricultural lands; OPA's required - policies for sanitary landfill designation on LF-4N prohibit toxic wastes
.Regional Official Plan Policies	H	. Strongly protective policies fo prime agricultural lands; OPA's may not be required
.Local Zoning By-laws	M-H	. Agricultural and sanitary landfill zoning
.Land Sales	M	. No land sales on site - indicates stability
.Absentee Land Ownership % of Area	L	. High percentage of lands under absentee ownership - sign of instability due to land speculation
.Building Quality		
%Good	M	. Moderate percentage of buildings in good condition - indicates some degree of instability
%Poor	H	. No buildings in poor condition - sign of stability

Page 6 - Table H.4.1

SITE/INDICATOR	RATING	RATIONALE
LF-1E/PI-27E		
.Existing Land Use Pattern		
%Commercial	M	. Some commercial land uses on site
%Industrial	M	. Some industrial land uses on site
.Number of Residences	H	. High number of residences on combined site
.Number of Commercial Facilities	M	. One commercial facility on site
.Number of Industrial Facilities	M	. One industrial facility on site
.Land Use Designations	L-M	. LF-1E (landfill site) is entirely agricultural (some degree of constraint) but PI-27E is designated industrial - compatible designation for physical/chemical plant (opportunity)
.Vacant Lots of Record	M	. Moderate number of vacant lots on combined site
.Local Official Plan Policies	L-M	. Prime agricultural lands with protective policies (LF-1E); OPA not required if facility qualifies as public use - industrial policies appear to permit facilities without OPA (PI-27E) - generally compatible policies
.Regional Official Plan Policies	L-M	. Prime agricultural lands, but facilities permitted if impacts minimized (LF-1E); policies for urban industrial development on PI-27E may permit facilities, no OPA's required - generally compatible policies.
.Local Zoning By-laws	L-M	. Entirely agricultural zoning, but PI-27E permits industrial uses - generally compatible zoning
.Land Sales	L	. Some land sales on site - sign of instability
.Absentee Land Ownership % of Area	M	. Moderate percentage of lands under absentee ownership - sign of potential instability
.Building Quality		
%Good	L	. Relatively low percentage of buildings in good condition - sign of unstable level of investment in area
%Poor	H	. Low percentage of buildings in poor condition - sign of stability (high constraint)

TABLE H.4.2
SUMMARY OF SITING OPTION RATINGS - SITE VICINITY

SITE/INDICATOR	RATING	RATIONALE
LF-3C		
.Existing Land Use Pattern		
% Residential	L-M	. Some residential land uses in site vicinity
% Commercial	L	. No commercial land uses
% Industrial	M	. No industrial land uses
OVERALL	L-M	
.Number of Residences	M	. Moderate number of residences
.Density of Residences Per 1000 ha	M	. Moderate density of residences
.Residences within 1000 m	L	. Low number of residences within 1000 m of site
OVERALL	L-M	
.Number of Commercial Facilities	L	. Few commercial facilities
.Number of Industrial Facilities	H	. No industrial facilities
.Land Use Designations		
- Residential	L	. No residential designations
- Commercial	L	. No commercial designations
- Industrial	H	. No industrial designations
- Agricultural	M	. Primarily designated agricultural (moderate constraint beyond site area)
OVERALL	M	
.Vacant Lots of Record	L-M	. moderately low number of vacant lots of record
.Local Official Plan Policies	M-H	. Generally protective policies for . prime agricultural lands; O.P.A. required - minor infilling of rural cluster permitted.
.Regional Official Plan Policies	M-H	. Generally protective policies for . prime agricultural lands - no toxic waste treatment policies
.Local Zoning By-laws		
% Residential	L	. No residential zoning
% Agricultural	M	. Majority of site vicinity zoned agricultural
% Commercial	M	. Some commercial zoning
% General/Heavy Industrial	M	. No general/heavy industrial zoning
% Prestige Industrial	L	. No prestige industrial zoning
OVERALL	L-M	
.Land Sales	H	. Low number of land sales indicates stability
.Absentee Land Ownership % Area	M-H	. Low percentage of lands under absentee ownership - sign of stability
.Building Quality - % Good	M	. Moderately low percentage of buildings in good condition - sign of some degree of instability
.Trends of Land Value	H	. Steadily rising land values indicates stability (high constraint)
.Niagara Escarpment Plan	-	. not affected
.Parkway Belt West Plan	-	. not affected

Page 2 - Table H.4.2

SITE/INDICATOR	RATING	RATIONALE
LF-9C		
.Existing Land Use Pattern		
% Residential	L	. No residential land use
% Commercial	L	. No commercial land use
% Industrial	M	. No industrial land use
OVERALL	L	
.Number of Residences	L	. Low number of residences in site vicinity
.Density of Residences Per 1000 ha	L	. Low density of residences in site vicinity
.Residences within 1000 m	L-M	. Moderately low number of residences within 1000 m of site
OVERALL	L-M	
.Number of Commercial Facilities	L	. Low number of commercial facilities
.Number of Industrial Facilities	H	. No industrial facilities in site vicinity
.Land Use Designations		
- Residential	M	. Recreational Trailer Park designation considered to be residential
- Agricultural	M	. Predominantly rural designated
- Commercial	L	. No commercial designations
- Industrial	H	. No industrial designations
OVERALL	M	
.Vacant Lots of Record	L	. Low number of vacant lots of record
.Local Official Plan Policies	M-H	. Generally protective policies for prime agricultural lands; no toxic waste treatment policies
.Regional Official Plan Policies	M-H	. Generally protective policies for prime agricultural lands; no toxic waste treatment policies
.Local Zoning By-laws		. Trailer Park zoning considered to be residential
% Residential	M	
% Agricultural	M	. Predominantly rural zoned
% Commercial	M	. Some commercial zoning on site vicinity
% General/Heavy Industrial	M	. No general/heavy industrial zoning
% Prestige Industrial	L	. No prestige industrial zoning
OVERALL	M	
.Land Sales	H	. Few land sales in site vicinity - indicates stability
.Absentee Land Ownership % Area	H	. Low percentage of lands under absentee ownership - sign of stability
.Building Quality - % Good	M	. Moderate low percentage of buildings in good condition - sign of instability
.Trends in Land Value	H	. Steadily rising land values indicate stability
.Niagara Escarpment Plan	-	. not affected
.Parkway Belt West Plan	-	. not affected

Page 3 - Table H.4.2

SITE/INDICATOR	RATING	RATIONALE
LF-1E		
.Existing Land Use Pattern		
% Residential	M-H	. Substantial residential land uses in site vicinity
% Commercial	L	. No commercial land uses
% Industrial	M	. No industrial land uses
OVERALL	M	
.Number of Residences	M-H	. Moderately high number of residences in site vicinity
.Density of Residences Per 1000 ha	H	. High density of residences in site vicinity
.Residences within 1000 m	M	. Moderate number of residences within 1000 m of site
OVERALL	M-H	
.Number of Commercial Facilities	L	. Few commercial facilities in site vicinity
.Number of Industrial Facilities	H	. No industrial facilities in site vicinity
.Land Use Designations		
- Residential	M	. Some residential designations
- Agricultural	M	. Considerable agricultural lands (includes rural)
- Commercial	L	. No commercial designations
- Industrial	M	. Some industrial designations
OVERALL	M	
.Vacant Lots of Record	H	. High number of vacant lots of record (140)
.Local Official Plan Policies	L-M	. Generally protective policies for prime agricultural lands; policies permitting minor infilling of Cooks Mills; significant industrial uses permitted
.Regional Official Plan Policies	L-M	. Agricultural/Rural area; industrial policies may permit facilities
.Local Zoning By-laws		
% Residential	M	
% Agricultural	M	
% Commercial	M	
% General/Heavy Industrial	M	. Predominantly agricultural zoning
% Prestige Industrial	L	
OVERALL	M	
.Land Sales	H	. Few land sales
.Absentee Land Ownership % Area	M	. Some of site vicinity absentee owned
.Building Quality - % Good	M	. Most of buildings in good condition
.Trends in Land Value	M	. No discernable trends
.Niagara Escarpment Plan	-	. not affected
.Parkway Belt West Plan	-	. not affected

Page 4 - Table H.4.2

SITE/INDICATOR	RATING	RATIONALE
LF-4N/PI-1N		
.Existing Land Use Pattern		
% Residential	H	. Site vicinity primarily agricultural with some residential clusters
% Commercial	M	
% Industrial	M	
OVERALL	M-H	
.Number of Residences	M-H	. Moderate number of residences
.Density of Residences Per 1000 m	L-M	. Moderately low residential density
.Residences within 1000 m	M	. Moderate number of residences within 1000 m of site
OVERALL	M	
.Number of Commercial Facilities	M	. Moderate number of commercial facilities
.Number of Industrial Facilities	M	. 2 industrial facilities
.Land Use Designations		
- Residential	L	
- Agricultural	M	. Site vicinity designated primarily agricultural with no
- Commercial	L	
- General/Heavy Industrial	H	
OVERALL	M	
.Vacant Lots of Record	M	. Moderate number of vacant lots of record (66)
.Local Official Plan Policies	H	. Agricultural land protection policies in site vicinity
.Regional Official Plan Policies	H	
.Local Zoning By-laws		
% Residential	L	
% Agricultural	M	
% Commercial	L	. Site vicinity primarily zoned agricultural (medium constraint); no residential zoning
% General/Heavy Industrial	M	
% Prestige Industrial	M	
OVERALL	L-M	
.Land Sales	M	. 15 land sales in site vicinity
.Absentee Land Ownership % Area	L	. Majority of site vicinity absenteee owned
.Building Quality - % Good	H	. 89% buildings in good condition
.Trends in Land Value	L	. Large fluctuations in land value
.Niagara Escarpment Plan	M	. Includes escarpment protection and complementary use areas
.Parkway Belt West Plan	M	. Includes public and open space uses
OVERALL	M	

Page 5 - Table H.4.2

SITE/INDICATOR	RATING	RATIONALE
LF-4N/PI-13N		
.Existing Land Use Pattern		
% Residential	H	. Most of site vicinity vacant/agricultural; significant amount of residential lands
% Commercial	M	
% Industrial	M	
OVERALL	M-H	
.Number of Residences	H	. Large number of residences in large site vicinity
.Density of Residences Per 1000 m	M	. Moderate residential density
.Residences within 1000 m	H	. High number of residences within 1000 m of site
OVERALL	H	
.Number of Commercial Facilities	H	. 19 commercial uses
.Number of Industrial Facilities	M	. 1 industrial use
.Land Use Designations		
- Residential	M	
- Agricultural	M	. Majority of site vicinity designated agricultural
- Commercial	L	
- Industrial	H	
OVERALL	M	
.Vacant Lots of Record	M	. 69 vacant lots of record
.Local Official Plan Policies	H	. Policies to protect prime agricultural lands
.Regional Official Plan Policies	H	
.Local Zoning By-laws		
% Residential	L	
% Agricultural	M	. Majority of site vicinity zoned agricultural; no residential zoning
% Commercial	L	
% General/Heavy Industrial	M	
% Prestige Industrial	M	
OVERALL	L-M	
.Land Sales	L	. 21 land sales
.Absentee Land Ownership % Area	L	. Majority of site vicinity absentee owned
.Building Quality - % Good	H	. 86% of buildings in good condition
.Trends in Land Value	L	. Large fluctuations in land value
.Niagara Escarpment Plan	M	. Includes escarpment protection and complementary use areas
.Parkway Belt West Plan	L	. Public and open space uses for transportation purposes
OVERALL	L-M	

Page 6 - Table H.4.2

SITE/INDICATOR	RATING	RATIONALE
LF-1E/PI-27E		
.Existing Land Use Pattern		. Most of site vicinity is rural/ vacant, equal amounts of residential and general industrial (3% each). Industrial lands located close to sites
% Residential	M	
% Commercial	L	
% Industrial	L	
OVERALL	$\overline{L}$-M	
.Number of Residences	H	. Large number of residences in site vicinity (286)
.Density of Residences Per 1000 ha	M-H	. Moderately high residential density
.Residences within 1000 m	M-H	. Moderately high number of residences within 1000 m of site
OVERALL	$\overline{M-H}$	
.Number of Commercial Facilities	M	. 13 commercial uses
.Number of Industrial Facilities	L	. 11 industrial uses
.Land Use Designations		. Large percentage of site vicinity (23%) designated for industrial uses
- Residential	M	
- Agricultural	L	
- Commercial	M	
- Industrial	L	
OVERALL	$\overline{L}$	
.Vacant Lots of Record	H	. Large number of vacant lots (106)
.Local Official Plan Policies	L-M	. Industrial development encouraged, agricultural lands to be protected
.Regional Official Plan Policies	L-M	
.Local Zoning By-laws		. Variety of urban and non urban uses zoned around site
% Residential	M	
% Agricultural	M	
% Commercial	M	
% General/Heavy Industrial	L	
% Prestige Industrial	M	
OVERALL	$\overline{M}$	
.Land Sales	H	. 10 land sales
.Absentee Land Ownership % Area	M	. some of site vicinity is absentee owned
.Building Quality - % Good	M	. 69% of buildings in good condition
.Trends in Land Value	M	. No discernable trend
.Niagara Escarpment Plan	-	. not affected
.Parkway Belt West Plan	-	. not affected

TABLE H.4.3
SUMMARY OF SITING OPTION RATINGS - COMMUNITY AND REGIONAL AREA

SITE/INDICATOR	RATING	RATIONALE
LF-3C		
.Existing Land Use Pattern		
%Residential	L	. Some residential land use (low constraint)
%Industrial	H	. No industrial land use (high constraint
OVERALL	L-M	
.Land Use Designations		
-Residential	L	. Low percentage of lands designated residential
-Industrial	H	. No industrial designations
OVERALL	L-M	
.Local Official Plan Policies	M	. Generally protective policies for prime agricultural lands; facility may be permitted if impacts minimized; minor infilling permitted in residential clusters
.Regional Official Plan Policies	M	. Generally protective policies for prime agricultural lands - facility may be permitted if impacts minimized
.Niagara Escarpment Plan	-	. Not affected
.Parkway Belt West Plan	-	. Not affected

Page 2 - Table H.4.3

SITE/INDICATOR	RATING	RATIONALE
LF-9C		
.Existing Land Use Pattern		
%Residential	L	. Some residential land use (low constraint)
%Industrial	H	. No industrial land use (high constraint)
OVERALL	L-M	
.Land Use Designations		
-Residential	L	. Low percentage of lands designated residential
-Industrial	H	. No industrial designations
OVERALL	L-M	
.Local Official Plan Policies	M	. Generally protective policies for prime agricultural lands; facility may be permitted if impacts minimized; major infilling permitted in residential clusters
.Regional Official Plan Policies	M	. Generally protective policies for prime agricultural lands - facility may be permitted if impacts minimized
.Niagara Escarpment Plan	-	. Not affected
.Parkway Belt West Plan	-	. Not affected

Page 3 - Table H.4.3

SITE/INDICATOR	RATING	RATIONALE
LF-1E		
.Existing Land Use Pattern		
%Residential	L	. Some residential land use (low constraint)
%Industrial	L	. Significant amount of industrial land use (low constraint)
OVERALL	L	
.Land Use Designations		
-Residential	L	. No residential designations
-Industrial	L	. Substantial amount of land designated industrial
OVERALL	L	
.Local Official Plan Policies	M	. Policies permitting substantial general industrial development, (opportunity) but somewhat offset by policies protecting prime agricultural lands and urban residential growth in Cooks Mills area
.Regional Official Plan Policies	M	. Policies promoting industrial development in Niagara Falls Urban Area, but somewhat offset by protective policies for prime agricultural lands
.Niagara Escarpment Plan	-	. Not affected
.Parkway Belt West Plan	-	. Not affected

SITE/INDICATOR	RATING	RATIONALE
LF-4N/PI-1N		
.Existing Land Use Pattern		
%Residential	M	. Moderate amount of residential land use
%Industrial	H	. No industrial land use
OVERALL	M	
.Land Use Designations		
-Residential	M	. Moderate amount of lands designated residential
-Industrial	M	. Limited amount of lands designated industrial
OVERALL	M	
.Local Official Plan Policies	M	. Protective policies for prime agricultural lands Policies promoting some urban residential development in Milton and residential infilling in Hamlet settlements
.Regional Official Plan Policies	M	. Protective policies for prime agricultural lands Policies promoting some urban residential development in Milton and residential infilling of Hamlet settlement
.Niagara Escarpment Plan	M-H	. Includes escarpment protection complementary use and minor settlement areas
.Parkway Belt West Plan	M	. Generally public and open space uses
OVERALL	M-H	

SITE/INDICATOR	RATING	RATIONALE
LF-4N/PI-13N		
.Existing Land Use Pattern		
%Residential	M	. Moderate amount of residential land use
%Industrial	H	. No industrial land use
OVERALL	M	
.Land Use Designations		
-Residential	M	. Moderate amount of lands designated residential
-Industrial	M	. Limited amount of lands designated industrial
OVERALL	M	
.Local Official Plan Policies	M	. Protective policies for prime agricultural lands Policies promoting some urban residential development in Milton and some infilling in Hamlet settlements
.Regional Official Plan Policies	M	. Protective policies for prime agricultural lands Policies promote some urban residential development in Milton and some residential infilling of Hamlet settlements
.Niagara Escarpment Plan	M-H	. Includes escarpment protection, complementary use and minor settlement areas
.Parkway Belt West Plan	L-M	. Generally public and open space uses, including transportation uses
OVERALL	M	

Page 6 - Table H.4.3

SITE/INDICATOR	RATING	RATIONALE
LF-1E/PI-27E		
.Existing Land Use Pattern		
%Residential	H	. Substantial amount of residential land use
%Industrial	L	. Moderate amount of industrial land use
OVERALL	L-M	
.Land Use Designations		
-Residential	H	. Substantial amount of lands designated residential
-Industrial	L	. Substantial amount of lands designated industrial
OVERALL	L	
.Local Official Plan Policies	M	. Policies promote substantial urban residential development in southern Niagara Falls area and Cooks Mills settlement area; protective policies for prime agricultural lands; largely offset by policies promoting substantial general industrial development
.Regional Official Plan Policies	M	. Policies promoting general industrial development in Niagara Falls Urban Area partly offset by protective policies for prime agricultural lands
.Niagara Escarpment Plan	-	. Not affected
.Parkway Belt West Plan	-	. Not affected

TABLE H.4.4
SUMMARY OF SITING OPTION RATINGS - ACCESS ROADS

SITE/INDICATOR	RATING	RATIONALE
LF-3C		
.Existing Land Use Pattern -Residential	H	. Substantial residential land uses
.Number of Residences	H	. High number of residences enroute
.Number of Commercial Facilities	H	. High number of commercial facilities enroute
.Land Use Designations		
-Residential	M-H	. Moderately high amount of residentially designated land
-General/Heavy Industrial	M	. No general/heavy industrial lands
OVERALL	$\overline{\text{M}}$-H	
.Vacant Lots of Record	H	. High number of vacant lots of record
.Local Official Plan Policies	H	. Urban development policies in Vineland - high projected population growth
.Regional Official Plan Policies	H	. Vineland Urban area contains urban growth and development policies
.Unapproved Development Proposals	H	. Large residential development project proposed in Vineland area

Page 2 - Table H.4.4

SITE/INDICATOR	RATING	RATIONALE
LF-9C		
.Existing Land Use Pattern -Residential	H	. Substantial residential land uses
.Number of Residences	H	. High number of residences enroute
.Number of Commercial Facilities	H	. High number of commercial facilities enroute
.Land Use Designations -Residential	M-H	. Moderately high amount of residentially designated lands
-General/Heavy Industrial	M	. No general/heavy industrial lands
OVERALL	$\overline{M}$-H	
.Vacant Lots of Record	H	. High number of vacant lots of record
.Local Official Plan Policies	H	. Urban development policies in Vineland - high projected population growth
.Regional Official Plan Policies	H	. Vineland Urban area contains urban growth and development policies
.Unapproved Development Proposals	H	. Large residential development project proposed in Vineland

Page 3 - Table H.4.4

SITE/INDICATOR	RATING	RATIONALE
LF-1E		
.Existing Land Use Pattern		
-Residential	L	. No residential land uses
.Number of Residences	L	. Few residences enroute
.Number of Commercial Facilities	L	. Few commercial facilities enroute
.Land Use Designations		
-Residential	L	. No lands designated residential
-General/Heavy Industrial	L	. Substantial lands designated general/heavy industrial
OVERALL	L	
.Vacant Lots of Record	L	. Low number of vacant lots of record
.Local Official Plan Policies	L	. Policies generally promote non-urban land uses
.Regional Official Plan Policies	L	. Policies generally promote non-urban land uses
.Unapproved Development Proposals	L	. No unapproved development proposals

SITE/INDICATOR	RATING	RATIONALE
LF-4N/PI-1N		
.Existing Land Use Pattern -Residential	H	. High amount of residential uses
.Number of Residences	M	. Moderate number of residences enroute
.Number of Commercial Facilities	M	. Moderate number of commercial facilities enroute
.Land Use Designations		
-Residential	H	. High amount of land designated residential
-General/Heavy Industrial	M	. No general/heavy industrial lands
OVERALL	$\overline{M}$-H	
.Vacant Lots of Record	H	. High number of vacant lots of record
.Local Official Plan Policies	M	. Milton policies generally promote non-urban uses except for possible urban residential development at Fourth Line/Derry . Oakville policies include future urban residential on Highway 25 south of Highway 5
.Regional Official Plan Policies	M-H	. Generally non-urban except for possible future residential to south along Highway 25
.Unapproved Development Proposals	H	. Large residential/commercial development proposal in Milton area

SITE/INDICATOR	RATING	RATIONALE
LF-4N/PI-13N		
.Existing Land Use Pattern -Residential	H	. High amount of residential land uses
.Number of Residences	M	. Moderate number of residences enroute
.Number of Commercial Facilities	M	. Moderate number of commercial facilities enroute
.Land Use Designations -Residential	H	. High amount of land designated residential
-General/Heavy Industrial	M	. No general/heavy industrial lands
OVERALL	$\overline{M}$-H	
.Vacant Lots of Record	H	. High number of vacant lots of record
.Local Official Plan Policies	M-H	. Milton policies generally promote non-urban uses except for possible future urban residential development at Fourth Line/Derry . Oakville policies include future urban residential growth on Highway 25 south of Highway 5
.Regional Official Plan Policies	M-H	. Generally non-urban except for possible future residential to south along Highway 25
.Unapproved Development Proposals	H	. Large residential/commercial development proposal in Milton area

SITE/INDICATOR	RATING	RATIONALE
LF-1E/PI-27E		
.Existing Land Use Pattern -Residential	L	. No residential land uses
.Number of Residences	L	. Low number of residences enroute
.Number of Commercial Facilities	L	. Low number of commercial facilities enroute
.Land Use Designations -Residential	L	. No residential land use designations
-General/Heavy Industrial	L	. Substantial general/heavy industrial lands
OVERALL	L	
.Vacant Lots of Record	L	. Limited number of vacant lots of record
.Local Official Plan Policies	L	. Policies generally promote non-urban land uses; also general industrial uses
.Regional Official Plan Policies	L	. Policies generally promote non-urban land uses
.Unapproved Development Proposals	L	. No unapproved development proposals

TABLE H.5 - COMPARATIVE EVALUATION OF SITING OPTIONS
- AGGREGATION OF INDICATORS
TABLE H.5.1 - SITE AREA

FACTOR/INDICATOR	LEVELS *							RATIONALE
	+1	-1	-2	-3	-4	-5	-6	
EXISTING LAND USE								
.Existing Land Use Pattern (Commercial & Industrial)	-	L	-	M	-	-	-	. Residential land uses previously screened - remaining commercial or industrial land uses on site represent some degree of constraint, but not exclusionary
.Number of Residences	-	L	L-M	M	M-H	H	-	. Number of residences represents some degree of constraint - no exclusionary totals on site
.Number of Commercial Facilities	-	L	-	M	-	-	-	. Number of commercial facilities on site represents some degree of constraint, but very few occurrences - minor to moderate levels of constraint (no high)
.Number of Industrial Facilities	-	L	-	M	-	-	-	. Number of industrial facilities on site represents some degree of constraint (expropriation) despite possible land use compatibility, but very few occurrences - low to moderate levels of constraint (no high)

*NOTE: These "Levels of Constraint on a scale from +1 to -6 generally correspond to the 5-point scale used in Table H.4-Scaling of Indicators, as follows:

TABLE H.4	TABLE H.6
LOW	+1 or -1
MODERATELY LOW	-2
MEDIUM	-3
MODERATELY HIGH	-4
HIGH	-5

*NOTE: there were no scores of -6 assigned, indicating an absence of potentially exclusionary constraints in the land use analysis.

FACTOR/INDICATOR	LEVEL +1	-1	-2	-3	-4	-5	-6	RATIONALE
PROPOSED AND PLANNED LAND USE								
.Land Use Designations (Industrial & Agricultural)	-	L	L-M	M	M-H	H	-	. Residential and commercial lands previously screened - remaining designations provide trade-off between agricultural lands (high constaint) and general industrial lands (potential siting opportunity) - presence of industrial designations reduces level of constraint to moderate range
.Vacant Lots of Record	-	L	-	M	-	H	-	. Vacant lots of record represent some degree of constraint, but not exclusionary
.Local Official Plan Policies	-	L	-	M	-	H	-	. Official plan policies generally apply some restriction to permitted uses - some degree of constraint - no completely unconstrained or totally exclusionary policies evident
.Regional Official Plan Policies	-	L	-	M	-	H	-	. Same as above
.Local Zoning By-laws	-	L	L-M	M	M-H	H	-	. Residential and commercial zones in site areas previously screened - remaining zones provide trade-off between agricultural (high constraint) and industrial zoning (potential siting opportunity) - presence of industrial zoning or zoning which permits industry reduces level of constraint to moderate range

Page 3 - Table II.5.1

FACTOR/INDICATOR	LEVEL +1	-1	-2	-3	-4	-5	-6	RATIONALE
LAND USE STABILITY								
.Land Sales	-	L	-	M	-	-	-	. Higher numbers of land sales indicate greater instability - lower level of constraint - no sales (i.e., stability) considered moderate constraint - private ownership of lands represents some degree of constraint, but not exclusionary (no high constraint)
.Absentee Land Ownership	-	L	L-M	M	M-H	H	-	. Some degree of constraint evident, but the higher proportion of lands under absentee ownership the lower the level of constraint (sign of instability) - no exclusionary constraint
.Building Quality	-	L	-	M	-	H	-	. Any building on site represents some degree of constraint - the higher the proportion of "good" quality buildings the higher the level of constraint (greater stability indicated) - inverse relationship for "poor" quality buildings (i.e., high proportion of poor, lower level of constraint) - no exclusionary levels

TABLE H.5.2 - SITE VICINITY

FACTOR/INDICATOR	LEVEL							RATIONALE
	+1	-1	-2	-3	-4	-5	-6	
EXISTING LAND USE								
.Existing Land Use Pattern -Industrial	L	-	-	M	-	-	-	. General industrial uses in site vicinity represents a siting opportunity (Level+1) - no industrial uses is a moderate constraint - no high or exclusionary constraints
-Residential	-	L	-	M	-	H	-	. Residential uses represent some degree of constraint - no exclusionary totals in site vicinity
-Commercial	-	L	-	M	-	-	-	. Commercial uses represent some level of constraint, but few uses in site vicinity - no high or exclusionary constraint
OVERALL	-	L	L-M	M	M-H	H	-	
.Number of Residences (includes density of residences per 1000 ha and residences within 1000 m of site	-	L	L-M	M	M-H	H	-	. Number of residences represents some degree of constraint - no exclusionary totals in site vicinity
.Number of Commercial Facilities	-	L	-	M	-	H	-	. Number of commercial facilities represents some degree of constraint, but no exclusionary totals in site vicinity
.Number of Industrial Facilities	L	-	-	M	-	H	-	. Presence of several industrial facilities in site vicinity represents a siting opportunity (compatibility) or absence of constraint (Level +1) - no industrial facilities is a relatively high constraint

FACTOR/INDICATOR	+1	-1	-2	-3	-4	-5	-6	RATIONALE
PROPOSED AND PLANNED LAND USE								
.Land Use Designations								
-Residential	L	-	-	M	-	-	-	. Residential lands represent some degree of constraint, but limited amount in site vicinity - totals are low to moderate (no high or exclusionary constraints);absence of residential designation is siting opportunity (Level +1)
-Commercial	L	-	-	M	-	-	-	. Commercial lands represent some degree of constraint, but limited amount in site vicinity - totals are low to moderate (no high or exclusionary constraints);absence of commercial designation is siting opportunity (Level +1)
-General Industrial	L	-	-	M	-	H	-	. General industrial lands represent potential siting opportunity (or absence of constraint) - absence of such lands can be considered a high constraint due to disadvantages relative to sites with general industrial lands (no exclusionary constraint)
-Agricultural	-	L	-	M	-	-	-	. Agricultural lands represent some degree of constraint, generally in moderate to high range (no high or exclusionary constraints)
.Vacant Lots of Record	-	L	L-M	M	M-H	H	-	. Vacant lots of record represent some degree of constraint, but not exclusionary
.Local Official Plan Policies	-	L	L-M	M	M-H	H	-	. Official plan policies generally apply some restrictions to permitted uses - some degree of constraint - no completely positive or totally exclusionary policies evident . Trade-offs between certain development policies (i.e., residential vs. industrial) may result in moderately low or moderately high constraint levels
.Regional Official Plan	-	L	L-M	M	M-H	H	-	. Same as above

FACTOR/INDICATOR	+1	-1	-2	-3	-4	-5	-6	RATIONALE
PROPOSED AND PLANNED (Cont'd)								
.Local Zoning By-laws -Residential	L	-	-	M	-	-	-	. Residential zoning represents some degree of constraint, but limited amount in site vicinity - totals are low to moderate (no high or exclusionary constraints)
-Commercial	L	-	-	M	-	-	-	. Commercial zoning represents some degree of constraint, but limited amount in site vicinity - totals are low to moderate (no high or exclusionary constraints)
-General/Heavy Industrial	L	-	-	M	-	-	-	. General/heavy industrial zoning represents a potential siting opportunity (compatibility) or absence of constraint - absence of such zoning is a moderate constraint (no high or exclusionary constraints)
-Prestige Industrial	L	-	-	M	-	H	-	. Prestige industrial zoning represents some degree of constraint, but not exclusionary
-Agricultural	-	L	-	M	-	-	-	. Agricultural zoning represents some degree of constraint (moderate range), but no high or exclusionary constraints
LAND USE STABILITY								
.Land Sales	-	L	-	M	-	H	-	. Some degree of constraint evident due to private land ownership, but greater volumes of sales indicate lesser stability and lower level of constraint - no exclusionary constraint
.Absentee Land Ownership	-	L	L-M	M	M-H	H	-	. Some degree of constraint evident due to private land ownership, but the higher the proportion of lands under absentee ownership, the lower the level of constraint (sign of instability)

FACTOR/INDICATOR	LEVEL							RATIONALE
	+1	-1	-2	-3	-4	-5	-6	
.Building Quality	-	-	-	M	-	H	-	. Proximity of any buildings to the site potentially represents some degree of constraint - the higher the proportion of "good" quality buildings, the higher the level of constraint (greater stability indicated)
.Trends in Land Value	-	L	-	M	-	H	-	. Some degree of constraint evident due to private land ownership, but constraint levels vary with degree of price fluctuations - greater fluctuations (i.e., instability) indicate
PROVINCIAL POLICIES AND PLANS								
.Niagara Escarpment Plan	-	L	L-M	M	M-H	H	-	. Generally represents moderate level of constraint, but a limited number of siting options affected - trade-off between protected or special use areas (high constraint) and complementary (transportation/utility) uses (low constraint - siting opportunity)
.Parkway Belt West Plan	-	L	L-M	M	-	-	-	. Generally represents moderate level of constraint, but a limited number of siting options affected - trade-off between public and open space uses (moderate constraint) and utility and transportation uses (low constraint - siting opportunity)

TABLE H.5.3 - COMMUNITY AND REGIONAL AREA

FACTOR/INDICATOR	LEVEL +1	-1	-2	-3	-4	-5	-6	RATIONALE
EXISTING LAND USE								
.Existing Land Use Pattern -Residential	-	L	-	M	-	H	-	. Residential land uses represent some degree of constraint, but amounts not exclusionary
-Industrial	L	L	-	M	-	H	-	. Industrial land uses represent potential siting opportunities (if compatible) or low constraint - no industrial uses is high constraint
PROPOSED AND PLANNED LAND USE								
.Land Use Designations -Residential	-	L	-	M	-	H	-	. Residential lands represent some degree of constraint, but not exclusionary
-Industrial	L	L	-	M	-	H	-	. Industrial lands represent potential siting opportunities (if compatible) or low constraint - absence of industrial lands is moderate constraint - no high or exclusionary constraints evident
.Local Official Plan Policies	-	L	L-M	M	M-H	H	-	. Official plan policies generally apply some restrictions to permitted uses - no completely unconstrained or exclusionary policies evident . Trade-offs between certain policies (i.e., residential vs. industrial development) may result in moderately low or moderately high levels of constraint
.Regional Official Plan Policies	-	L	L-M	M	M-H	H	-	. Same as above

FACTOR/INDICATOR	LEVEL +1	-1	-2	-3	-4	-5	-6	RATIONALE
PROVINCIAL POLICIES AND PLANS								
.Niagara Escarpment Plan	-	L	L-M	M	M-H	H	-	. Generally represents moderate level of constraint, but a limited number of siting options affected - trade-off between protected or special use areas (high constraint) and complementary (transportation/utility) uses (low constraint - siting opportunity)
.Parkway Belt West Plan	-	L	L-M	M	-	-	-	. Generally represents moderate level of constraint, but a limited number of siting options affected - trade-off between public and open space uses (excluding waste treatment facilities) - moderate constraint - and areas for utility/transportation uses (low constraint - siting opportunity)

TABLE H.5.4 - ACCESS ROADS

FACTOR/INDICATOR	LEVEL							RATIONALE
	+1	-1	-2	-3	-4	-5	-6	
EXISTING LAND USE								
.Existing Land Use Pattern -Residential	L	L	-	M	-	H	-	. Residential land uses represent some degree of constraint, but not exclusionary; absence of residential lands is siting opportunity (Level+1)
.Number of Residences	L	L	L-M	M	M-H	H	-	. Number of residences represent some degree of constraint - totals are extremely high at highest level of constraints Level -5 but impacts not exclusionary;relative absence of residences is siting opportunity (Level +1)
.Number of Commercial Facilities	L	L	-	M	-	H	-	. Number of commercial facilities represents some degree of constraint, but not exclusionary; absence of facilities is siting opportunity (Level+1)
PROPOSED AND PLANNED LAND USE								
.Land Use Designations -Residential	L	L	-	M	-	H	-	. Residential lands represent some degree of constraint, but not exclusionary; absence of residential lands is siting opportunity (Level+1)
-General/Heavy Industrial	L	-	-	M	-	-	-	. General/heavy industrial designations represent potential siting opportunities (compatibility) or absence of constraint - absence of industrial lands is a moderate constraint - no high or exclusionary constraints
-Prestige Industrial	L	L	-	M	-	-	-	. Prestige industrial lands represent some degree of constraint - limited amount along access roads - totals are low to moderate (no high or exclusionary constraints); absence of prestige industrial lands is siting opportunity (Level+1)

Page 2 - Table II. 5.4

FACTOR/INDICATOR	LEVEL +1	-1	-2	-3	-4	-5	-6	RATIONALE
.Unapproved Development Proposals (Residential)	-	L	-	M	-	H	-	. Residential development proposals are potential severe constraints - few occurrences, but potential for large scale development in future if approved - until approved, may not be exclusionary;
.Vacant Lots of Record	-	L	-	M	-	H	-	. Vacant lots of record represent some degree of constraint, but not exclusionary
.Local Official Plan Policies	-	L	L-M	M	M-H	H	-	. Official plan policies generally apply some restrictions to permitted uses - some degree of constraint, but no completely unconstrained or exclusionary policies evident . Trade-offs between residential vs. industrial growth policies may result in moderately low or moderately high constraint levels
.Regional Official Plan Policies	-	L	L-M	M	M-H	H	-	. Same as above

TABLE H.6
COMPARATIVE EVALUATION OF SITING OPTIONS
SUMMARY OF SUITABILITY RATINGS BY FACTOR

FACTOR - EXISTING LAND USE

STUDY AREA	LF-3C	LF-9C	LF-1E	LF-4N/ PI-1N	LF-4N/ PI-13N	LF-1E/ PI-27E	RATIONALE
SITE AREA	-1.6	-1.0	-4.0	-2.3	-2.3	-4.3	• LF-9C (-1.0) and LF-3C (-1.6) rated most suitable due to fewest residences and no commercial or industrial facilities/uses on site; more residences on LF-3C than LF-9C. • LF-4N/PI-1N (-2.3) and LF-4N/PI-13N (-2.3) have moderate numbers of residences no commercial or industrial facilities/uses on site. • LF-1E (-4.0) and LF-1E/PI-27E (-4.3) have high numbers of residences and some commercial or industrial facilities/uses on site; LF-1E/PI-27E requires more displacement of existing uses than LF-1E integrated.
SITE VICINITY	-2.0	-1.9	-3.4	-3.1	-4.7	-3.3	• LF-9C (-1.9) and LF-3C (-2.0) have moderately low numbers of residences within the site vicinity, particularly within highest impact zone (1000 m from site); few commercial uses (but no industrial lands); LF-9C clearly has fewest residences overall, though slightly more than LF-3C in 1000 m zone. • LF-4N/PI-1N (-3.1), LF-1E/PI-27E (-3.3) and LF-1E (-3.4) generally have similar land use characteristics with some notable exceptions: LF-4N/PI-1N has a similar number of residences and proportion of residential land uses, compared to LF-1E, but has a lower residential density in the site vicinity; LF-1E/PI-27E has a greater number of residences within 1000 m and in the total site vicinity, but has substantial industrial land uses to offset this constraint.

STUDY AREA	LF-3C	LF-9C	LF-1E	LF-4N/ PI-1N	LF-4N/ PI-13N	LF-1E/ PI-27E	RATIONALE
SITE VICINITY Cont'd							• LF-4N/PI-13N (-4.7) has the greatest number of residences within 1000 m and within the site vicinity, as well as the greatest number of commercial facilities of all siting options.
COMMUNITY & REGIONAL AREA	-2.0	-2.0	-1.0	-3.0	-3.0	-2.0	• LF-1E (-1.0) has a limited amount of residential land use, but significant amounts of compatible industrial land use. • LF-3C (-2.0) and LF-9C (-2.0) have limited residential lands, but no industrial land use; LF-1E/PI-27E (-2.0) has significant amounts of residential land use, but this is largely offset by the substantial compatible industrial lands in the regional area. • LF-4N/PI-1N (-3.0) and LF-4N/PI-13N (-3.0) both have primarily agricultural land use patterns with some significant residential areas in the region, but no compatible industrial lands.
ACCESS ROADS	-5.0	-5.0	-1.0	-3.4	-3.4	-1.0	• LF-1E (-1.0) and LF-1E/PI-27E (-1.0) have few residences or commercial facilities and no residential land uses. • LF-4N/PI-1N (-3.4) and LF-4N/PI-13N (-3.4) have a moderate number of residences and commercial facilities and a high proportion of residential land use along the access roads. • LF-3C (-5.0) and LF-9C (-5.0) clearly have the highest numbers of residences and commercial facilities along with a high proportion of residential lands enroute.

TABLE N.6
COMPARATIVE EVALUATION OF SITING OPTIONS
SUMMARY OF SUITABILITY RATINGS BY FACTOR

FACTOR - PROPOSED AND PLANNED LAND USE

STUDY AREA	LF-3C	LF-9C	LF-1E	LF-4N/ PI-1N	LF-4N/ PI-13N	LF-1E/ PI-27E	RATIONALE
SITE AREA	-4.3	-4.3	-4.1	-4.0	-3.8	-2.1	• LF-1E/PI-27E (-2.1) has compatible land use designations and zoning for the proposed facilities; heavy industrial designation on PI-27E is compatible with a physical/chemical plant, while agricultural designation on LF-1E is a lesser constraint to a landfill facility than to treatment facilities. • LF-4N/PI-13N (-3.8) and LF-4N/PI-1N (-4.0) have generally agricultural land use designations (high constraint) which are partially offset by the sanitary landfill designation on LF-4N which may accommodate the landfill facility; policies and zoning are protective of agricultural land; LF-4N/PI-13N has fewer vacant lots of record. • LF-1E (-4.1), LF-3C (-4.3) and LF-9C (-4.3) have generally agricultural land use designations (high constraint) with protective policies and few vacant lots of record, but LF-1E may permit public treatment facilities without amendment to the Official Plan.

STUDY AREA	LF-3C	LF-9C	LF-1E	LF-4N/ PI-1N	LF-4N/ PI-13N	LF-1E/ PI-27E	RATIONALE
SITE VICINITY	-3.1	-3.1	-3.0	-3.4	-3.4	-1.8	• LF-1E/PI-27E (-1.8) has generally agricultural land use designations with substantial amounts of compatible industrial designations; official plan policies are protective of agricultural lands, but also promote industrial development; large number of vacant lots of record. • LF-1E (-3.0), LF-3C (-3.1) and LF-9C (-3.1) have generally agricultural land use designations but no industrial designations (except LF-1E which has some general industrial lands); official plan policies are generally protective of agricultural lands; industrial designations and development policies near LF-1E (opportunity) partially offset by a limited amount of residentially and commercially zoned land nearly, and substantially higher number of vacant lots of record. • LF-4N/PI-1N (-3.4) and LF-4N/PI-13N (-3.4) are primarily designated agricultural with some significant residential clusters but no industrial lands; official plan policies are protective of agricultural lands and permit some residential infilling; moderate numbers of vacant lots of record.
COMMUNITY & REGIONAL AREA	-2.3	-2.3	-1.6	-3.0	-3.0	-1.6	• LF-1E (-1.6) and LF-1E/PI-27E (-1.6) have generally agricultural lands with substantial amounts of compatible industrial designations; LF-1E/PI-27E has considerable heavy industrial lands with official plan policies encouraging industrial development, but significant residential land use designation partially offsets advantages; industrial development policies also pertain to LF-1E, but are somewhat offset by policies protecting agricultural uses and permitting residential infilling in Cooks Mills area.

STUDY AREA	LF-3C	LF-9C	LF-1E	LF-4N/ PI-1N	LF-4N/ PI-13N	LF-1E/ PI-27E	RATIONALE
COMMUNITY & REGIONAL AREA Cont'd							. LF-3C (-2.3) and LF-9C (-2.3) have predominantly agricultural land use designations with minor residential clusters, but no industrial lands; official plan policies protect agricultural lands, but may permit facilities if impacts minimized. . LF-4N/PI-1N (-3.0) and LF-4N/PI-13N (-3.0) have predominantly agricultural land use designations with some residential clusters, but no industrial lands; official plan policies protect agricultural lands and may permit significant urban residential development in Milton area and infilling of rural residential clusters.
ACCESS ROADS	-4.3	-4.3	-0.5	-4.3	-4.3	-0.5	. LF-1E (-0.5) and LF-1E/PI-27E (-0.5) have no residential designations, no constraining official plan policies, no unapproved development proposals, and a low number of vacant lots of record enroute. . LF-3C (-4.3), LF-9C (-4.3), LF-4N/PI-1N (-4.3) and LF-4N/PI-13N (-4.3) all have access roads which travel through rural/agricultural areas with substantial amounts of residentially designated land; policies protect agricultural lands; Milton routes have fewer vacant lots of record than Lincoln-Pelham-West Lincoln route, but substantially greater unapproved development proposal near Milton than those in Vineland area.

TABLE N.6
COMPARATIVE EVALUATION OF SITING OPTIONS
SUMMARY OF SUITABILITY RATINGS BY FACTOR

FACTOR - LAND USE STABILITY

STUDY AREA	LF-3C	LF-9C	LF-1E	LF-4N/ PI-1N	LF-4N/ PI-13N	LF-1E/ PI-27E	RATIONALE
SITE AREA	-4.4	-3.2	-3.6	-2.6	-1.8	-2.2	• LF-4N/PI-13N (-1.8) has highest proportion of site area under absentee ownership, with no land sales and a relatively low percentage of on-site buildings in good condition, indicating the lowest overall level of stability and hence, the lowest level of constraint. • LF-1E/PI-27E (-2.2) has a moderate proportion of its lands under absentee ownership (moderate constraint), some land sales and a relatively low percentage of buildings in good condition, indicating a moderately low level of stability (moderately low constraint). • LF-4N/PI-1N (-2.6) has a relatively high proportion of lands under absentee ownership (moderately low constraint) but no land sales and a high proportion of good quality buildings, indicating somewhat higher levels of stability. • LF-9C (-3.2) has a moderate proportion of lands under absentee ownership, no land sales and all buildings in good condition, indicating a moderate level of stability (moderate constraint). • LF-1E (-3.6) has a moderately low proportion of lands under absentee ownership (moderately high constraint), no land sales, but only a moderate percentage of buildings in good condition, indicating a moderately high level of stability overall. • LF-3C (-4.4) has the lowest proportion of lands under absentee ownership (high constraint), no land sales and high percentage of buildings in good condition, indicating the highest level of stability (highest constraint) of all siting options.

STUDY AREA	LF-3C	LF-9C	LF-1E	LF-4N/ PI-1N	LF-4N/ PI-13N	LF-1E/ PI-27E	RATIONALE
SITE VICINITY	-4.8	-4.8	-3.5	-1.8	-1.3	-3.5	• LF-4N/PI-13N (-1.3) and LF-4N/PI-1N (-1.8) have substantial proportions of lands under absentee ownership (low constraint), several recent land sales, severe fluctuations in land value (low constraint) and a high proportion of buildings of good quality (high constraint), LF-4N/PI-13N has significantly more land sales, indicating somewhat less stability than LF-4N/PI-1N. • LF-1E (-3.5) and LF-1E/PI-27E (-3.5) have a moderate proportion of lands under absentee ownership, relatively few land sales (high constraint) no discernable trend in land values (moderate constraint), and a moderate percentage of buildings of good quality indicating an overall level of moderate stability. • LF-3C (-4.8) and LF-9C (-4.8) have low proportions of land under absentee ownership (high constraint), few land sales, steadily rising land values (high constraint) and moderate percentages of buildings in good condition, indicating an overall level of high stability (high constraint).

TABLE H.6
COMPARATIVE EVALUATION OF SITING OPTIONS
SUMMARY OF SUITABILITY RATINGS BY FACTOR

FACTOR - PROVINCIAL POLICIES AND PLANS

STUDY AREA	LF-3C	LF-9C	LF-1E	LF-4N/ PI-1N	LF-4N/ PI-13N	LF-1E/ PI-27E	RATIONALE
SITE VICINITY	-	-	-	-3.0	-2.0	-	• LF-4N/PI-13N (-2.0) has Parkway Belt West Plan lands providing for public and open space uses (for transportation purposes) near PI-13N (opportunity), and Niagara Escarpment Plan lands near LF-4N providing for escarpment protection and complementary use areas (moderate constraint). • LF-4N/PI-1N (-3.0) may impact both Parkway Belt West Plan (public and open space uses near PI-1N) and Niagara Escarpment Plan (escarpment protection and complementary use areas near LF-4N) both being moderate constraints. • ratings not assigned to siting options which are not affected by either provincial policy area.
COMMUNITY & REGIONAL AREA	-	-	-	-4.0	-3.0	-	• LF-4N/PI-13N (-3.0) has Parkway Belt West Plan lands providing for public and open space uses, including transportation uses near PI-13N, and Niagara Escarpment Plan lands near LF-4N providing for escarpment protection, complementary uses and minor settlement areas (moderately high constaint). • LF-4N/PI-1N (-4.0) has similar impacts on Parkway Belt West Plan and Niagara Escarpment Plan lands, but does not include opportunity for transportation uses to PI-1N as does Parkway Belt West Plan link to PI-13N.

TABLE H.7

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
FACTOR RANKING/WEIGHTING RATIONALE

Factor/Study Area	OWMC Factor Rank	LKAL Weight	Rationale
Existing Land Use - site vicinity	8	30	. existing land uses adjacent to site, especially residential (number of residences) considered most sensitive receptor of land use impacts - difficult to mitigate.
Planned and Proposed Land Use - site	7	25	. planned land use (land use designations) on site key to compatibility of proposed facilities with land use intentions of municipalities - may be mitigatible through redesignation.
Planned and Proposed Land Use - site vicinity	7	25	. planned land uses adjacent to site, especially residential designations (constraint) and heavy industrial designations (potential opportunity) important considerations in determing compatibility of proposed facilities with land use intentions of municipality - may be mitigatible through redesignation.
Existing Land Use - site	6	20	. existing land use on site, especially residential uses, very sensitive to facility impacts, but may be partially mitigated through expropriation and compensation.
Existing Land Use - community and regional area	4	10	. indirect impacts expected beyond site vicinity, but provides overview of impacts on community and regional land use pattern.
Planned and Proposed Land Use - community and regional area	4	10	. indirect impacts on proposed and planned land uses, but may influence future development activity in community and regional area.

TABLE H.7

(Continued)

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
FACTOR RANKING/WEIGHTING RATIONALE

Factor/Study Area	OWMC Factor Rank	LKAL Weight	Rationale
Existing Land Use - access roads	4	10	. direct though relatively minor impacts of additional truck traffic on existing land uses along access roads, except where urban lands affected.
Planned and Proposed Land Use - access roads	4	10	. indirect impacts on future land uses along access roads, but may have significant affect on major residential development proposals; mitigation possible through land use controls.
Land Use Stability - site vicinity	3	5	. indirect impacts; qualifies other land use impacts, though limited reliability of data.
Land Use Stability - site	2	2	. indirect impacts; qualifies other land use impacts; less reliability of data then for site vicinity due to small size of study area.
Provincial Policies & Plans - site vicinity	2	2	. minor and indirect impact potential due to distance from site, mitigation possible through land use controls.
Provincial Policies & Plans - community and regional area	1	1	. very minor and indirect impact potential as further removed than site vicinity.

TABLE H.8.1 - LF-3C

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS DATA MATRICES

Factor	Indicator	LF-3C Site		
1.Existing Land Use	.Existing Land Use Pattern	Rural/Vacant	100%	
	.Number of Residences	4		
	.Industrial and Commercial Facilities	Commercial Industrial	0 0	
2.Proposed & Planned Land Use	.Land Use Designations	Rural Hazard Lands	73% 27%	
	.Approved Development Proposals	-		
	.Unapproved Development Proposals	-		
	.Vacant Lots of Record	1		
	.Local O.P. Policies	. Rural designation - protective policies for prime agricultural lands; facilities permitted if impacts minimized. . O.P.A. required as facility will serve beyond township boundary.		
	.Regional O.P. Policies	. Prime agricultural designation - protective policies for farmlands; waste facilities permitted if impacts minimized. . O.P.A. not required.		
	.Local Zoning By-laws	Agricultural	100%	
3.Land Use Stability	.Land Sales	0		
	.Development Proposals	-		
	.Absentee Land Ownership	Area Properties	11% 14%	
	.Building Quality	Good 80%	Fair 0%	Poor 20%
	.Trends in Land Value	-		

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

Factor	Indicator	LF-3C Site Vicinity	
1.Existing Land Use	.Existing Land Use Pattern	Residential Rural/Vacant Other	1% 96% 3%
	.Number of Residences	177	
	.Residences per 1,000 ha	62	
	.Residences within 1,000 m	30	
	.Industrial & Commercial Facilities	Commercial Industrial	4 0
2.Proposed & Planned Land Use	.Land Use Designations	Rural Hazard Lands Recreational	78% 20% 2%
	.Approved Development Proposals	Residential (2) (1 unit) 10.0 ha; Robert Land Academy (24.0 ha)	
	.Unapproved Development Proposals	-	
	.Vacant Lots of Record	38	
	.Local O.P. Policies	. Limited rural residential lands (Hamlet of Oswego) . Majority of area designated rural - protective policies for prime agricultural lands	
	.Regional O.P. Policies	. Prime agricultural designation on majority of area - protective policies for farmlands . No urban lands or development policies	

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

LF-3C

Factor	Indicator	Site Vicinity
	.Local Zoning By-laws	Public Industrial 0.1% (M2) Rural Commercial 0.05% (RC) Agricultural 98.05% (A2, A2-107, A2-132) Open Space 1.8% (01)
3.Land Use Stability	.Land Sales	7
	.Development Proposals	See above
	.Absentee Land Ownership	Area 17% Properties 14%
	.Building Quality	Good 68% Fair 30% Poor 2%
	.Trends in Land Value	. West Lincoln area farmland - sales values rose steadily 1980-83. . Overall increase of 28% 1980-83.
4.Provincial Policies & Plans	.Niagara Escarpment Plan	. Not Affected
	.Parkway Belt West Plan	. Not Affected

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

LF-3C

Factor	Indicator	Community Regional	
1.Existing Land Use	.Existing Land Use Pattern	Residential	1%
		Rural/Vacant	99%
2.Proposed and Planned Land Use	.Land Use Designations	Hamlet Community	1%
		Agriculture	15%
		Rural	79%
		Hazard Lands	5%
	.Local Official Plan Policies	. Rural residential clusters - 5 Hamlets . Substantial rural designation - protective policies for prime agricultural lands; facilities permitted if impacts are minimized.	
	.Regional Official Plan Policies	. Substantial prime agricultural or rural land - protective policies for farmlands; facilities are permitted if impacts are minimized.	

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

LF-3C

Factor	Indicator	Community	Regional
3.Provincial Policies & Plans	.Niagara Escarpment Plan	N/A (not affected)	
	.Parkway Belt West Plan	N/A (not affected)	

Air Dispersion Zones		0-2 km	LF-3C 2-5 km	5-20 km
4.Future Population	.Landfill Only	-		-
	.Partially Integrated Only	-		-
	.Total	185	1,712	44,647

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

Factor	Indicator	TO LF-3C 2 Access Road
1.Existing Land Uses	.Existing Land Use Pattern	Residential 4% Commercial 0% Industrial 1% Cluster 1% Rural/Vacant 91% Other 3%
	.Number of Residences	833
	.Industrial and Commercial Facilities	Comm. 59 Ind. 4
2.Proposed and Planned Land Use	.Land Use Designations	Rural 81% O.S./Hazard 16% Residential 3%
	.Approved Dev. Proposals	1 Industrial 1.5 ha 25 Residential (54 units) 80.84 ha
	.Unapproved Dev. Proposals	1 Residential 700 Units (19.4 ha)
	.Vacant Lots of Record	89
	.Local Official Plan Policies	.Vineland - total projected population of 8,700 .Hamlet Community of Bismarck
	.Regional Official Plan Policies	.Vineland urban area

TABLE H.8.2 - LF-9C

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

Factor	Indicator	LF-9C Site
1.Existing Land Use	.Existing Land Use Pattern	Rural/Vacant 100%
	.Number of Residences	3
	.Industrial and Commercial Facilities	Commercial 0 Industrial 0
2.Proposed & Planned Land Use	.Land Use Designations	Rural 95% Hazard Lands 5%
	.Approved Development Proposals	-
	.Unapproved Development Proposals	-
	.Vacant Lots of Record	1
	.Local O.P. Policies	. Rural designation - protective policies for prime agricultural lands; waste facilities permitted if impaccs minimized. . O.P.A. required as facility will serve beyond township boundary.
	.Regional O.P. Policies	. Prime agricultural designation - protective policies for farmlands; waste facilities permitted if impacts minimized. . O.P.A. not required.
	.Local Zoning By-laws	Agricultural 100%
3.Land Use Stability	.Land Sales	0
	.Development Proposals	-
	.Absentee Land Ownership	Area 30% Properties 25%
	.Building Quality	Good 100% Fair 0% Poor 0%
	.Trends in Land Value	-

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

Factor	Indicator *	LF-9C Site Vicinity	
1.Existing Land Use	.Existing Land Use Pattern	Rural/Vacant Other	99% 1%
	.Number of Residences	75	
	.Residences per 1,000 ha	39	
	.Residences within 1,000 m	37	
	.Industrial & Commercial Facilities	Commercial Industrial	7 0
2.Proposed & Planned Land Use	.Land Use Designations	Rural Recreational Trailer Park Hazard Lands	88% 1% 11%
	.Approved Development Proposals	-	
	.Unapproved Development Proposals	-	
	.Vacant Lots of Record	23	
	.Local O.P. Policies	. Rural designation on majority of area - protective policies for prime agricultural lands . Small highway commercial property - no significant development policies . No urban lands	
	.Regional O.P. Policies	. Prime agricultural designation on majority of area - protective policies for farmlands . No urban lands or development policies	

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

LF-9C

Factor	Indicator	Site Vicinity
	.Local Zoning By-laws	Rural Commercial 0.03% (RC-102) Highway Commercial 0.04% (C3) Agricultural 98.7% (A2,A2-124) Institutional 0.03% (I) Trailer Park 1.0% (T2)
3.Land Use Stability	.Land Sales	9
	.Development Proposals	See above
	.Absentee Land Ownership	Area 11% Properties 17%
	.Building Quality	Good Fair Poor 69% 25% 6%
	.Trends in Land Value	. West Lincoln area farmland sales values rose steadily (1980-83) . Overall increase of 28% 1980-83.
4.Provincial Policies & Plans	.Niagara Escarpment Plan	. Not Affected
	.Parkway Belt West Plan	. Not Affected

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

LF-9C

Factor	Indicator	Community Regional	
1.Existing Land Use	.Existing Land Use Pattern	Residential	1%
		Residential Cluster	1%
		Rural/Vacant	98%
2.Proposed and Planned Land Use	.Land Use Designations	Hamlet Community	1%
		Rural	96%
		Hazard Lands	3%
	.Local Official Plan Policies	. Rural residential cluster - 4 Hamlets . Substantial rural designation- . protective policies for farmlands . Waste facilities permitted if impacts minimized.	
	.Regional Official Plan Policies	. Substantial prime agricultural or rural land - protective policies for farmlands; facilities are permitted if impacts are minimized.	

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

LF-9C

Factor	Indicator	Community	Regional
3.Provincial Policies & Plans	.Niagara Escarpment Plan	N/A	(not affected)
	.Parkway Belt West Plan	N/A	(not affected)

			LF-9C	
Air Dispersion Zones		0-2 km	2-5 km	5-20 km
4.Future Population	.Landfill Only	-		-
	.Partially Integrated Only	-		-
	.Total	191	1,990	110,664

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

Factor	Indicator	Access Road TO LF-9C 1	
1. Existing Land Uses	.Existing Land Use Pattern	Residential	6%
		Commercial	0%
		Industrial	1%
		Res. Cluster	2%
		Rural/Vacant	87%
		Other	4%
	.Number of Residences	750	
	.Industrial and Commercial Facilities	Commercial	51
		Industrial	4
2. Proposed and Planned Land Use	.Land Use Designations	Rural	75%
		O.S./Hazard	20%
		Residential	5%
	.Approved Dev. Proposals	1 Industrial 1.5 ha; 24 Resid. (53 units) 58.14 ha	
	.Unapproved Dev. Proposals	1 Residential 700 units (19.4 ha)	
	.Vacant Lots of Record	73	
	.Local Official Plan Policies	.Vineland - total projected population of 8,700	
	.Regional Official Plan Policies	.Vineland urban area	

TABLE H.8.3 - LF-1E

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS DATA MATRICES

Factor	Indicator	LF-1E Site
1.Existing Land Use	.Existing Land Use Pattern	Commercial 2% Rural/Vacant 98%
	.Number of Residences	16
	.Industrial and Commercial Facilities	Commercial 1 Industrial 0
2.Proposed & Planned Land Use	.Land Use Designations	Good General Agricultural 100%
	.Approved Development Proposals	-
	.Unapproved Development Proposals	-
	.Vacant Lots of Record	6
	.Local O.P. Policies	. Prime agricultural designation - protective policies for farmlands . O.P.A. not required if facilities qualify as "Public Use".
	.Regional O.P. Policies	. Prime agricultural designation - protective policies for farmlands; waste facilities permitted if impacts minimized. . O.P.A. not required.
	.Local Zoning By-laws	Rural Agricultural 100%
3.Land Use Stability	.Land Sales	0
	.Development Proposals	-
	.Absentee Land Ownership	Area 33% Properties 16%
	.Building Quality	Good 69% Fair 25% Poor 6%
	.Trends in Land Value	-

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

Factor	Indicator	LF-1E Site Vicinity	
1.Existing Land Use	.Existing Land Use Pattern	Residential	3%
		Residential Cluster	1%
		Rural/Vacant	91%
		Other	5%
	.Number of Residences	215	
	.Residences per 1,000 ha	92	
	.Residences within 1,000 m	56	
	.Industrial & Commercial Facilities	Commercial	9
		Industrial	0
2.Proposed & Planned Land Use	.Land Use Designations	Gen. Industrial	2%
		Neighbourhood Res.	1%
		Rural	25%
		Good General Agr.	57%
		Hazard Lands	10%
		Open Space	5%
	.Approved Development Proposals	-	
	.Unapproved Development Proposals	-	
	.Vacant Lots of Record	140	
	.Local O.P. Policies	. Prime agricultural designation on majority of lands - protective policies for farmlands . Significant residential neighbourhood (Cook's Mills) included in area - no population target assigned. . Significant industrial lands - general industrial uses permitted.	
	.Regional O.P. Policies	. Prime agricultural designation - protective policies for farmlands . No urban lands or development policies	

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

LF-1E

Factor	Indicator	Site Vicinity
	.Local Zoning By-laws	Highway Commercial 0.3% (HC) Rural Residential 0.5% (RR1) Rural Residential 2 2.0% (RR2) Agricultural 90.0% (RA) Rural 6.2% (R) Open Space 0.3% (01) Public & Private Open Space 0.6% (02) Shopping District 0.1% (C2)
3.Land Use Stability	.Land Sales	7
	.Development Proposals	See above
	.Absentee Land Ownership	Area 35% Properties 19%
	.Building Quality	Good 69% Fair 26% Poor 5%
	.Trends in Land Value	. Insufficient number of farmland sales in 1980-83 period to form a data base on which to establish a trend.
4.Provincial Policies & Plans	.Niagara Escarpment Plan	. Not Affected
	.Parkway Belt West Plan	. Not Affected

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

LF-1E

Factor	Indicator	Community Regional	
1.Existing Land Use	.Existing Land Use Pattern	Industrial Residential Cluster Rural/Vacant	6% 2% 92%
2.Proposed and Planned Land Use	.Land Use Designations	Resort Commercial Highway Commercial Industrial Agricultural Rural Open Space Hazard Lands	1% 1% 14% 52% 25% 3% 4%
	.Local Official Plan Policies	. Significant part of residential designation in Welland (Cook's Mills Residential Neighbourhood) . Substantial general industrial . Prime agricultural land designation - protective policies for farmlands	
	.Regional Official Plan Policies	. Significant part of Niagara Falls Urban Area - proposed industrial uses in O.P. . Substantial prime agricultural land with protective policies	

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

LF-1E

Factor	Indicator	Community	Regional
3. Provincial Policies & Plans	.Niagara Escarpment Plan	N/A (not affected)	
	.Parkway Belt West Plan	N/A (not affected)	

Air Dispersion Zones

LF-1E

		0-2 km	2-5 km	5-20 km
4. Future Population	.Landfill Only	-		-
	.Partially Integrated Only	-		-
	.Total	251	2,230	355,381

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

Factor	Indicator	TO LF-1E 2 Biggar/Crowland Access Road	
1.Existing Land Uses	.Existing Land Use Pattern	Residential 0% Commercial 0% Industrial 0% Rural/Vacant 96% Cluster 0% Other 4%	
	.Number of Residences	27	
	.Industrial and Commercial Facilities	Commercial 1 Industrial 0	
2.Proposed and Planned Land Use	.Land Use Designations	Agricultural 83% O.S./Hazard 7% Industrial 10%	
	.Approved Dev. Proposals	-	-
	.Unapproved Dev. Proposals	-	-
	.Vacant Lots of Record	17	
	.Local Official Plan Policies	.No Hamlets or residential areas designated on route	
	.Regional Official Plan Policies	.No residential areas designated	

TABLE H.8.4 - LF-4N/PI-1N

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS DATA MATRICES

Factor	Indicator	Site LF-4N	/ PI-1N
1. Existing Land Use	.Existing Land Use Pattern	Rural/Vacant 100%	Rural/Vacant 93% Other 7%
	.Number of Residences	6	5 = 11
	.Industrial and Commercial Facilities	Commercial 0 Industrial 0	0 = 0 0 = 0
2. Proposed & Planned Land Use	.Land Use Designations	Agricultural 34% Conser.& Haz. 4% Sanitary Landfill 62%	Agricultural 78% Conservation & Hazard 22%
	.Approved Development Proposals	-	-
	.Unapproved Development Proposals	-	-
	.Vacant Lots of Record	2	7 = 9
	.Local O.P. Policies	. Prime agr. des. with sanitary landfill permitted; protective policies for farmlands; sanitary landfill excludes ind. and hazardous wastes . O.P.A. required	. Prime agricultural designation - protective policies for farmlands . O.P.A. required
	.Regional O.P. Policies	. Rural des. -strongly protective policies for prime farmlands . O.P.A. may not be required - no policies for liquid waste treatment or disposal	. Rural des. - strongly protective policies for farmlands . O.P.A. may not be required
	.Local Zoning By-laws	San. Landfill 62% Agriculture 34% Conservation 16%	Agricultural 100%
3. Land Use Stability	.Land Sales	0	0 = 0
	.Development Proposals	See above	See above
	.Absentee Land Ownership	Area 71% Properties 38%	Area 58% = 66% Properties 58% = 53%
	.Building Quality	Good 82% Fair 18% Poor 0%	
	.Trends in Land Value	-	

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

Factor	Indicator	LF-4N	PI-1N
		Site Vicinity	
1.Existing Land Use	.Existing Land Use Pattern	Res. Cluster	4%
		Rural/Vacant	94%
		Other	2%
	.Number of Residences	131	116 = 220*
	.Residences per 1,000 ha	53	49 = 56*
	.Residences within 1,000 m	26	38 = 64*
	.Industrial & Commercial Facilities	Commercial 6 Industrial 1	Commercial 6 = 12* Industrial 1 = 2
2.Proposed & Planned Land Use	.Land Use Designations	Agriculture	55%
		Conservation & Hazard Lands	10%
		Niagara Escarpment	14%
		Parkway Belt	21%
	.Approved Development Proposals	Residential (1) (2 unit) (40.47 ha)	-
	.Unapproved Development Proposals	-	-
	.Vacant Lots of Record	39	29 = 66*
	.Local O.P. Policies	. Prime agricultural designation - protective policies for farmlands . Significant rural residential cluster (Boyne) - no significant development policies	
	.Regional O.P. Policies	. Rural designation - strongly protective policies for prime agricultural lands . No urban lands or development policies	

* Excludes overlap in site vicinity

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

LF-4N / PI-1N

Factor	Indicator	Site Vicinity	
	.Local Zoning By-laws	Med. Ind (M2) 2.1% Lt. Ind. (M1) 1.2% Hv. Ind (M3) 1.2% Agric. (A) 45.8% Conserv. (0) 49.7%	Conserv.(04) 3.1% Semi-Public O.S. (03) 2.5% Pub. O.S. (01) 0.2% Conserv. (0) 7.6% Agric. 86.6%
3.Land Use Stability	.Land Sales	10	13 = 15*
	.Development Proposals	See above	See above
	.Absentee Land Ownership	Area 88% Properties 27%	Area 63% = 76% Properties 26% = 26%
	.Building Quality	Good 89% Fair 7%	Poor 4%
	.Trends in Land Value	. Milton area farmland sales values rose sharply 1980-81, declined sharply 1981-82 . Overall decrease of 4% 1980-83	
4.Provincial Policies & Plans	.Niagara Escarpment Plan	. Moderate-includes Escarpment protection and complementary use area	. Moderate - includes Escarpment protection and complementary use area
	.Parkway Belt West Plan	. Moderate-public and open space uses	. Moderate-public and open space uses

* Excludes overlap in Site Vicinity

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

LF-4N / PI-1N

Factor	Indicator	Community Regional	
1.Existing Land Use	.Existing Land Use Pattern	Residential	2%
		Residential Cluster	2%
		Rural/Vacant	96%
2.Proposed and Planned Land Use	.Land Use Designations	Residential	4%
		Industrial	1%
		Agricultural	42%
		Rural	5%
		Conservation & Hazard Lands	15%
		Parkway Belt	33%
		*	
	.Local Official Plan Policies	. Significant urban residential designation in Milton (est. pop. capacity 6,000) . Rural clusters in Omagh and Boyne; includes part of Lowville Settlement Area . Substantial prime agricultural lands - protective policies for farmlands	
	.Regional Official Plan Policies	. Significant urban residential designation in Milton and Hamlet of Lowville . Substantial prime agricultural lands - protective policies for farmlands.	

*NOTE: Niagara Escarpment Planning Area represents 23% of study area if superimposed.

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

		LF-4N /	PI-1N
Factor	Indicator	Community	Regional
3. Provincial Policies & Plans	.Niagara Escarpment Plan	. Escarpment Rural Area . Escarpment protection area . Minor Urban Centre (Lowville)	. Escarpment protection area . Escarpment Rural area
	.Parkway Belt West Plan	. Public and open space uses	. Public and open space uses

Air Dispersion Zones		LF-4N/PI-1N		
		0-2 km	2-5 km	5-20 km
4. Future Population	.Landfill Only	137	7,253	575,269
	.Partially Integrated Only	209	5,669	695,240
	.Total	346	12,922	1,270,509

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

Factor	Indicator	Access Road TO 1 via 401	PI-1N 2 via QEW
1.Existing Land Uses	.Existing Land Use Pattern	Rural/Vacant 93% Clusters 3% Other 4%	Rural/Vacant 67% Clusters 14% Other 19%
	.Number of Residences	63	151
	.Industrial and Commercial Facilities	Commercial 2 Industrial 1	Commercial 15 Industrial 0
2.Proposed and Planned Land Use	.Land Use Designations	Rural Res. Cluster 2% Parkway Belt 72% Agricultural 6% O.S./Hazard 20%	Residential 14% Parkway Belt 45% Agricultural 22% O.S./Hazard 1% Other 18%
	.Approved Dev. Proposals	-	-
	.Unapproved Dev. Proposals	Residential/ Commercial/ Industrial Mix-404.7 ha	-
	.Vacant Lots of Record	7	38
	.Local Official Plan Policies	.Rural clusters at Boyne and Omagh .O.P. provides for possible future urban residential uses on N.W. corner of Fourth Line and Derry Rd.	.Urban res. designation south of Hwy. #5 .Special study area at Palermo
	.Regional Official Plan Policies	.No Hamlet or urban residential des. on access routes	.Urban area designated south of Hwy. #5

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

		PI-1N	TO 1	LF-4N
Factor	Indicator	Access Road		
1.Existing Land Uses	.Existing Land Use Pattern	Rural/Vacant		100%
	.Number of Residences		9	
	.Industrial and Commercial Facilities	Commercial Industrial		1 0
2.Proposed and Planned Land Use	.Land Use Designations	Agricultural Open Space/Hazard		88% 12%
	.Approved Dev. Proposals		-	
	.Unapproved Dev. Proposals		-	
	.Vacant Lots of Record		9	
	.Local Official Plan Policies	.Agricultural route		
	.Regional Official Plan Policies	.No Hamlets or urban residential designated		

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

Factor	Indicator	TO LF-4N 1 via 401 Access Road	2 via QEW
1.Existing Land Uses	.Existing Land Use Pattern	Rural/Vacant 94% Cluster 3% Other 3%	Rural/Vacant 76% Cluster 10% Other 14%
	.Number of Residences	70	178
	.Industrial and Commercial Facilities	Commercial 3 Industrial 0	Commercial 16 Industrial 1
2.Proposed and Planned Land Use	.Land Use Designations	Rural Residential Cluster 2% Parkway Belt 56% Agricultural 20% Open Space/ Hazard 22%	Residential 11% Parkway Belt 36% Agricultural 32% Open Space/ Hazard 8% Other 13%
	.Approved Dev. Proposals	-	-
	.Unapproved Dev. Proposals	1 Residential/ Industrial/ Commercial Mix-404.7 ha	-
	.Vacant Lots of Record	19	57
	.Local Official Plan Policies	.rural cluster at Boyne & Omagh O.P. provides for possible future urban residential uses @ N.W. corner of 4th Line & Derry Road.	.urban residential south of Hwy. #5 .Rural cluster at Boyne .Special study area st Palermo.
	.Regional Official Plan Policies	.No Hamlets or urban residential	.Urban designation south of Hwy. #5

TABLE H.8.5 - LF-4N/PI-13N

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

Factor	Indicator	Site LF-4N	/ PI-13N
1. Existing Land Use	.Existing Land Use Pattern	Rural/Vacant 100%	Rural/Vacant 100%
	.Number of Residences	6	4 = 10
	.Industrial and Commercial Facilities	Commercial 0 Industrial 0	Commercial 0 = 0 Industrial 0 = 0
2. Proposed & Planned Land Use	.Land Use Designations	Agricultural 34% Conser.&Haz. 4% Landfill 62%	Agricultural 95% Conser.&Haz. 5%
	.Approved Development Proposals	-	-
	.Unapproved Development Proposals	-	-
	.Vacant Lots of Record	2	1 = 3
	.Local O.P. Policies	. Prime agr. des. with sanitary landfill permitted protective policies for farmlands; sanitary landfill excludes industrial and hazardous wastes . O.P.A. required	. Prime agr. designation- protective policies for farmland . O.P.A. required
	.Regional O.P. Policies	. Rural designation strongly protective policies for prime farmlands . O.P.A. may not be required - no policies for liquid waste treatment	. Rural des. - strongly protective policies for farmlands . O.P.A. may not be required
	.Local Zoning By-laws	Agricultural 62% Agricultural 34% Conservation 4%	Agricultural 100%
3. Land Use Stability	.Land Sales	0	0 = 0
	.Development Proposals	See above	See above
	.Absentee Land Ownership	Area 71% Properties 38%	Area 100% = 86% Properties 80% = 54%
	.Building Quality	Good 67% Fair 33% Poor 0%	
	.Trends in Land Value	-	

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

		LF-4N /	PI-13N
Factor	Indicator	Site Vicinity	
1.Existing Land Use	.Existing Land Use Pattern	Res. Cluster 4% Rural/Vacant 95% Other 1%	Res. Cluster 1% Rural/Vacant 95% Commercial 1% Other 3%
	.Number of Residences	131	171 = 302
	.Residences per 1,000 ha	53	70 = 62
	.Residences within 1,000 m	26	59 = 85
	.Industrial & Commercial Facilities	Commercial 6 Industrial 1	Commercial 14 = 20 Industrial 0 = 1
2.Proposed & Planned Land Use	.Land Use Designations	Agricultural 64% Niagara Esc. P. 24% Conserv. & Haz. 12%	Agricultural 55% Pkwy Belt 24% Conserv.& Haz. 20% Residential 1%
	.Approved Development Proposals	Residential (1) (2 units) (40.47 ha)	-
	.Unapproved Development Proposals	-	-
	.Vacant Lots of Record	39	30 = 69
	.Local O.P. Policies	. Prime agr. des. -protective policies for farmlands . Significant rural residential cluster (Boyne) - no significant dev. policies	. Prime agr. des. - protective policies for farmlands . Small rural residential clusters (Omagh, Drumquin) - no significant development policies
	.Regional O.P. Policies	. Rural des. strongly protective policies for prime agricultural lands . No urban lands or development policies	. Rural designation - strongly protective policies for prime agricultural lands . No urban lands or development policies . Adjacent to environmentally sensitive area - environmental assessment required.

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

LF-4N / PI-13N

Factor	Indicator	Site Vicinity	
	.Local Zoning By-laws	Med. Ind.(M2) 2.1% Lt. Ind. (M1) 1.2% Hv. Ind. (M3) 1.2% Agric. (A) 45.9% Conserv. (0) 49.7%	Conserv.(04) 3.4% Semi-Public Open Space(03) 2.8% Pub.O.S.(01) 0.2% Conserv. (0) 8.4% Agriculture 85.19% Rural Commercial (C4) 0.01%
3.Land Use Stability	.Land Sales	10	11 = 21
	.Development Proposals	See above	See above
	.Absentee Land Ownership	Area 88% Properties 27%	Area 72% = 80% Properties 31% = 29%
	.Building Quality	Good 86% Fair 11% Poor 3%	
	.Trends in Land Value	. Milton area farmland sales values rose sharply in 1980-81, declined sharply 1981-82 . Overall decrease of 4% 1980-83	
4.Provincial Policies & Plans	.Niagara Escarpment Plan	. Moderate-includes Escarpment protection and complementary use area	. Not Affected
	.Parkway Belt West Plan	. Moderate -public and open space uses	. Low-public and open space, and transportation and utility uses

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS DATA MATRICES

LF-4N / PI-13N

Factor	Indicator	Community	Regional
1. Existing Land Use	.Existing Land Use Pattern	Residential	2%
		Residential Cluster	1%
		Rural/Vacant	97%
2. Proposed and Planned Land Use	.Land Use Designations	Residential	2%
		Industrial	1%
		Rural/Vacant	3%
		Agricultural	50%
		Conservation & Hazard Lands	15%
		Parkway Belt	29%
		*	
	.Local Official Plan Policies	. Significant urban residential designation in Milton (est. pop. capacity 6,000) . Rural cluster in Boyne; part of Lowville Settlement Area . Substantial prime agricultural lands - protective policies for farmlands	. Small rural residential cluster at Boyne . Prime agricultural designation - protective policies for farmlands . No urban areas
	.Regional Official Plan Policies	. Significant residential designations in Milton urban area and Hamlet of Lowville . Substantial prime agricultural lands - protective policies for farmlands	. Substantial prime agricultural designation - protective policies for farmlands . No urban areas

*NOTE: Niagara Escarpment Planning Area represents 33% of study area if superimposed.

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

		LF-4N /	PI-13N
Factor	Indicator	Community Regional	
3. Provincial Policies & Plans	.Niagara Escarpment Plan	. Escarpment protection area . Escarpment Rural area . Minor Urban Centre (Lowville)	. N/A (not affected)
	.Parkway Belt West Plan	. Public and open space uses	. Public and open space uses; possible residential O.P.A.

Air Dispersion Zones			LF-2N/PI-13N	
		0-2 km	2-5 km	5-20 km
4. Future Population	.Landfill Only	137	7,253	575,269
	.Partially Integrated Only	312	3,334	874,703
	.Total	449	10,587	1,449,972

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

		TO	PI-13N
		1 via Hwy #401	2 via Q.E.W.
Factor	Indicator	Access Road	
1.Existing Land Uses	.Existing Land Use Pattern	Rural/Vacant 92% Cluster 4% Other 4%	Rural/Vacant 77% Cluster 11% Other 12%
	.Number of Residences	54	209
	.Industrial and Commercial Facilities	Commercial 0 Industrial 0	Commercial 16 Industrial 1
2.Proposed and Planned Land Use	.Land Use Designations	Rural Residential Cluster 2% Parkway Belt 65% Agricultural 14% Open Space/ Hazard 19%	Residential 10% Parkway Belt 47% Agricultural 25% Open Space/ Hazard 7% Other 11%
	.Approved Dev. Proposals	-	-
	.Unapproved Dev. Proposals	1 Residential/ Industrial/ Commercial - 404.7 ha	-
	.Vacant Lots of Record	3	43
	.Local Official Plan Policies	.Possible future urban residential N.W. Fourth Line and Derry Road .O.P.A. required .Rural cluster - Omagh	.urban residential south of Hwy. #5 .Palermo study area .Rural clusters Omagh and Boyne
	.Regional Official Plan Policies	.No Hamlets or urban residential	.Urban designation south of Hwy. #5

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

Factor	Indicator	Access Road	PI-13N	TO 1	LF-4N
1. Existing Land Uses	.Existing Land Use Pattern	Rural/Vacant			96%
		Cluster			4%
	.Number of Residences			63	
	.Industrial and Commercial Facilities	Commercial			3
		Industrial			0
2. Proposed and Planned Land Use	.Land Use Designations	Rural Residential Cluster			2%
		Parkway Belt			39%
		Agricultural			42%
		Open Space/Hazard			17%
	.Approved Dev. Proposals			-	
	.Unapproved Dev. Proposals			-	
	.Vacant Lots of Record			14	
	.Local Official Plan Policies	.Rural clusters at Boyne and Omagh			
	.Regional Official Plan Policies	.No Hamlets or urban residential designated			

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

		TO LF-4N	
Factor	Indicator	1 via 401 Access Road	2 via QEW
1.Existing Land Uses	.Existing Land Use Pattern	Rural/Vacant 94% Cluster 3% Other 3%	Rural/Vacant 76% Cluster 10% Other 14%
	.Number of Residences	70	178
	.Industrial and Commercial Facilities	Commercial 3 Industrial 0	Commercial 16 Industrial 1
2.Proposed and Planned Land Use	.Land Use Designations	Rural Residential Cluster 2% Parkway Belt 56% Agricultural 20% Open Space/ Hazard 22%	Residential 11% Parkway Belt 36% Agricultural 32% Open Space/ Hazard 8% Other 13%
	.Approved Dev. Proposals	-	-
	.Unapproved Dev. Proposals	1 Residential/ Industrial/ Commercial Mix-404.7 ha	-
	.Vacant Lots of Record	19	57
	.Local Official Plan Policies	.rural cluster at Boyne & Omagh O.P. provides for possible future urban residential uses @ N.W. corner of 4th Line & Derry Road.	.urban residential south of Hwy. #5 .Rural cluster at Boyne .Special study area st Palermo.
	.Regional Official Plan Policies	.No Hamlets or urban residential	.Urban designation south of Hwy. #5

TABLE H.8.6 - LF-1E/PI-27E

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

		LF-1E /	PI-27E
Factor	Indicator	Site	
1. Existing Land Use	.Existing Land Use Pattern	Commercial 2% Rural/Vacant 98%	Industrial 3% Rural/Vacant 97%
	.Number of Residences	9	6 = 15
	.Industrial and Commercial Facilities	Commercial 1 Industrial 0	0 = 1 1 = 1
2. Proposed & Planned Land Use	.Land Use Designations	Good General Agr. 100%	Industrial 100%
	.Approved Development Proposals	-	-
	.Unapproved Development Proposals	-	-
	.Vacant Lots of Record	2	4 = 6
	.Local O.P. Policies	. Prime agr. des. -protective policies for farmland . O.P.A. not required if facilities quality as "public use"	. Industrial des. in draft O.P. -various types permitted waste treatment fac. appear to be permitted. . O.P.A. not required.
	.Regional O.P. Policies	. Prime agr. des. -protective policies for farmlands; waste treatment facilities permitted if impacts minimized . O.P.A. not required	. Urban area des. - urban indust. dev. permitted in draft O.P.; waste treatment facilities may be permitted . O.P.A. not required
	.Local Zoning By-laws	Rural Agr. 100%	Rural agr. 100% (permits industrial uses)
3. Land Use Stability	.Land Sales	0	2 = 2
	.Development Proposals	See above	See above
	.Absentee Land Ownership	Area 14% Properties 8%	Area 83% = 52% Properties 45% = 25%
	.Building Quality	Good 59% Fair 35% Poor 6%	
	.Trends in Land Value	-	

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

Factor	Indicator	LF-1E /	PI-27E
		Site Vicinity	
1. Existing Land Use	.Existing Land Use Pattern	Residential	2%
		Residential Cluster	1%
		Industrial	3%
		Rural/Vacant	85%
		Other	9%
	.Number of Residences	222	91 = 286*
	.Residences per 1,000 ha	91	45 = 75*
	.Residences within 1,000 m	38	36 = 74*
	.Industrial & Commercial Facilities	Commercial 9 Industrial 0	Commercial 8 = 15* Industrial 11 = 11
2. Proposed & Planned Land Use	.Land Use Designations	Residential	1%
		Highway Commercial	1%
		Industrial	23%
		Good-Gen. Agriculture	42%
		Hazard Lands	12%
		Open Space	6%
		Rural	15%
	.Approved Development Proposals	-	Residential (1) (2 units)(19.5 ha)
	.Unapproved Development Proposals	-	-
	.Vacant Lots of Record	144	28 = 170*
	.Local O.P. Policies	. Prime agricultural designation on most of area - protective policies for farmlands . Significant industrial designation near PI-27E - various industrial use types permitted (Draft O.P.) . Significant highway commercial designation - future commercial development proposed . Significant residential neighbourhood (Cook's Mills) included near LF-1E - no population target assigned	
	.Regional O.P. Policies	. Prime agricultural designation - protective policies for farmlands . Substantial urban area designation near PI-27E - industrial uses proposed.	

* Total excludes overlap in Site Vicinity

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

LF-1E / .PI-27E

Factor	Indicator	Site Vicinity	
	.Local Zoning By-laws	Hwy Comm.(HC) 0.3% Pub.&Priv. Open Space(02) 0.6% Open Space 1(01) 0.3% Shopping District (C2) 0.1% Rural Residential (RR1) 0.6% Rural Res.2(RR2) 1.9% Rural (R) 6.2% Agric. (RA) 90%	Open Space (OS) 8.0% Gen.Ind.(GI) 9.2% Lt. Ind.(LI) 5.6% Hv. Ind.(HI) 13.3% Prestige Industrial(P1) 3.0% Ind.(IND) 6.4% Haz. Lands(HL) 12.0% Hwy Comm.(HC) 3.0% Agric. (RA) 39.5%
3.Land Use Stability	.Land Sales	7	3 = 10
	.Development Proposals	See above	See above
	.Absentee Land Ownership	Area 35% Properties 19%	Area 53% = 44% Properties 38% = 25%
	.Building Quality	Good Fair 69% 27%	Poor 4%
	.Trends in Land Value	. Insufficient number of farmland sales in 1980-83 period to form a data base on which to establish a trend	
4.Provincial Policies & Plans	.Niagara Escarpment Plan	. Not Affected	. Not Affected
	.Parkway Belt West Plan	. Not Affected	. Not Affected

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS DATA MATRICES

LF-1E / PI-27E

Factor	Indicator	Community Regional	
1.Existing Land Use	.Existing Land Use Pattern	Residential	4%
		Residential Cluster	2%
		Industrial	4%
		Rural/Vacant	90%
2.Proposed and Planned Land Use	.Land Use Designations	Residential	4%
		Commercial	0%
		Tourist Commercial	1%
		Industrial	10%
		Good-General Agricultural	47%
		Open Space	3%
		Hazard Lands	3%
		Rural/Vacant	31%
		Resort Commercial	1%
		Highway Commercial	0%
	.Local Official Plan Policies	. Substantial parts of urban residential areas in southern Niagara Falls area (Westlane and Drummond)-est. pop. capacity 10,000 . Significant part of Cook's Mills residential neighbourhood in Welland outskirts . Substantial general industrial designation . Prime agricultural designation - protective policies for farmlands	
	.Regional Official Plan Policies	. Prime agricultural designation - protective policies for farmlands . Substantial urban area designation (Niagara Falls Urban Area) - proposed industrial uses in O.P.	

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

		LF-1E /	PI-27E
Factor	Indicator	Community Regional	
3.Provincial Policies & Plans	.Niagara Escarpment Plan	N/A (not affected)	N/A (not affected)
	.Parkway Belt West Plan	N/A (not affected)	N/A (not affected)

Air Dispersion Zones

			LF-1E/PI-27E	
		0-2 km	2-5 km	5-20 km
4.Future Population	.Landfill Only	251	2,230	355,381
	.Partially Integrated Only	138	11,576	396,337
	.Total	389	13,806	751,718

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

Factor	Indicator	TO PI-27E 1 Biggar Entrance Access Road
1.Existing Land Uses	.Existing Land Use Pattern	Residential 0% Commercial 0% Industrial 0% Rural/Vacant 94% Cluster 0% Other 6%
	.Number of Residences	15
	.Industrial and Commercial Facilities	Comm. 1 Ind. 0
2.Proposed and Planned Land Use	.Land Use Designations	Agricultural 66% O.S./Hazard 14% Industrial 20%
	.Approved Dev. Proposals	-
	.Unapproved Dev. Proposals	-
	.Vacant Lots of Record	10
	.Local Official Plan Policies	.Route through industrial and agricultural areas
	.Regional Official Plan Policies	.No residential areas designated

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

PI-27E TO LF-1E
2 Biggar/Crowland

Factor	Indicator	Access Road	
1.Existing Land Uses	.Existing Land Use Pattern	Residential 0% Commercial 0% Industrial 0% Rural/Vacant 100% Cluster 0% Other 0%	
	.Number of Residences	9	
	.Industrial and Commercial Facilities	Comm. 0 Ind. 0	
2.Proposed and Planned Land Use	.Land Use Designations	Agricultural 92% O.S./Hazard 8%	
	.Approved Dev. Proposals	-	-
	.Unapproved Dev. Proposals	-	-
	.Vacant Lots of Record	10	
	.Local Official Plan Policies	.No Hamlet or residential designated on route	
	.Regional Official Plan Policies	.No residential areas designated	

PHASE 4A - COMPARATIVE EVALUATION OF SITING OPTIONS
DATA MATRICES

Factor	Indicator	TO LF-1E 2 Biggar/Crowland Access Road	
1.Existing Land Uses	.Existing Land Use Pattern	Residential 0% Commercial 0% Industrial 0% Rural/Vacant 96% Cluster 0% Other 4%	
	.Number of Residences	27	
	.Industrial and Commercial Facilities	Commercial 1 Industrial 0	
2.Proposed and Planned Land Use	.Land Use Designations	Agricultural 83% O.S./Hazard 7% Industrial 10%	
	.Approved Dev. Proposals	-	-
	.Unapproved Dev. Proposals	-	-
	.Vacant Lots of Record	17	
	.Local Official Plan Policies	.No Hamlets or residential areas designated on route	
	.Regional Official Plan Policies	.No residential areas designated	

APPENDIX I

POPULATION PROJECTIONS FOR YEAR 2001 FOR AIR DISPERSION MODEL

INTRODUCTION

Leon Kentridge Associates and Marshall Macklin Monaghan were requested by OWMC to undertake future population projections within the vicinity of the eight candidate sites as an input to the Ontario Research Foundation (ORF) Air Dispersion Model. This model is being utilized to estimate the risk of human exposure to airborne emissions generated by the OWMC facilities. The results of the analysis will be used in the detailed comparative evaluation of the candidate sites.

Population projections to the year 2001 have been prepared for an area within a radius of 20 km from seven of the eight sites and a radius of 5 km of site LF-2N.* The projections for the seven sites are subdivided into 16 cells (see Figure 1) based on concentric rings 0-2 km, 2-5 km, 5-10 km and 10-20 km, from the centroid of the candidate site, with each ring divided into four quadrants, i.e., northwest, northeast, southwest and southeast.

The projections are compatible with estimates of 1981 population undertaken by the Institute of Environmental Research (IER). The IER estimates have been prepared for 300 cells for each of the nine sites and 16 cells for the remaining site, LF-2N. The estimates within 2 km of the site centroids are based on field surveys of house locations and average household size factors obtained from the 1981 census. The estimates for the remaining outer zones are based on 1981 census data on population by enumeration area, adjusted to match the ORF cells by pro-rating on an area-wide basis.

Since the cells used by IER are much smaller than those used in the present report, the IER estimates have been aggregated to correspond to the larger cells in order to facilitate comparison.

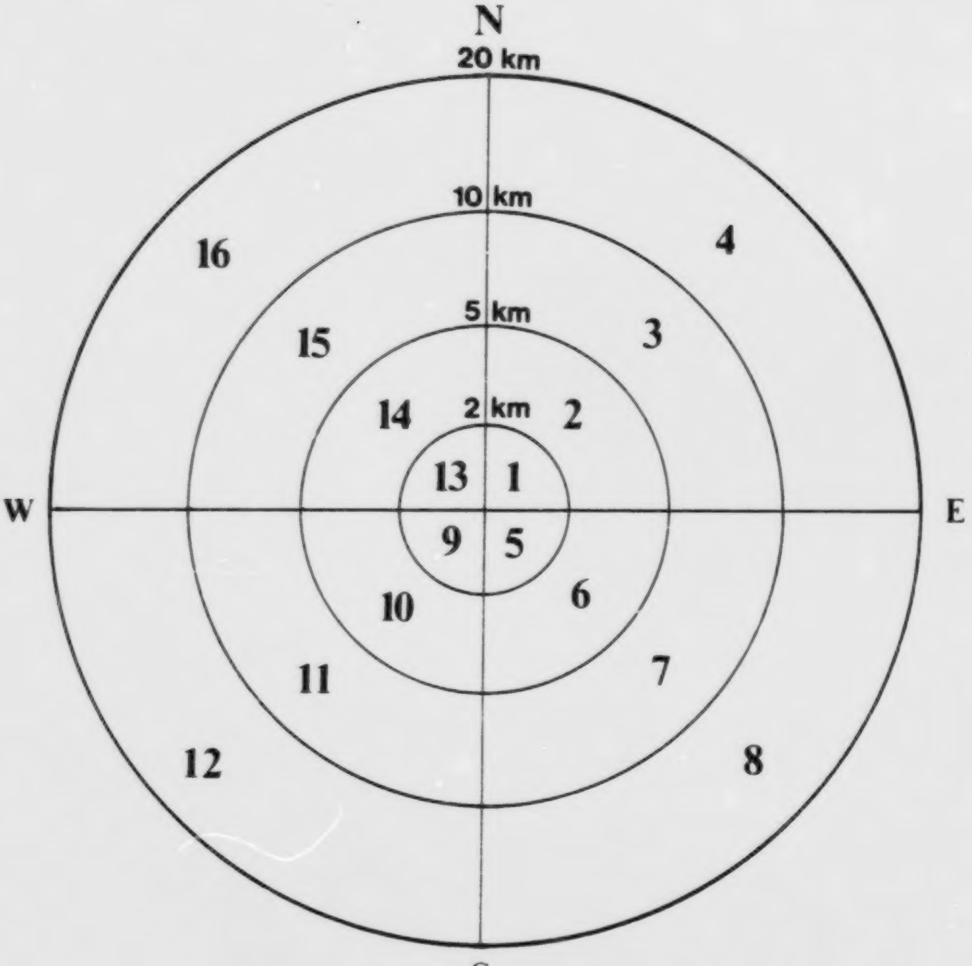
---

* No incinerator is being considered on site LF-2N because it lies within an approach path to Pearson International Airport. The study area for potential impacts of airborne emissions is therefore reduced.

The following report sets out the methodology, data sources, data limitations, procedures, summary tables of the population projections to the year 2001, and findings and conclusions.

Figure 1

POPULATION PROJECTION CELLS


N
20 km
10 km
5 km
2 km
16
4
15
3
14
2
13
1
W
E
9
5
10
6
11
7
12
8
S

Source: Leon Kentridge Associates Limited, 1984

METHODOLOGY

The methodology utilized was as follows:

1. A survey of all available projections was undertaken for the five Ontario regions and for the ten western New York State municipalities affected by the study areas. The survey included provincial Ministry of Treasury projections, regional municipality projections, and population forecasts contained in area municipality official plans.

   Population projections undertaken by regional and area municipalities on a traffic zone basis were selected as the principal source of projections. These projections have been produced for both traffic studies and for general planning purposes. The studies divide their areas of coverage into several hundred reasonably homogeneous geographic areas, using area municipality boundaries, roads, physical features and lot lines.

   The primary factors that led to the selection of traffic zone data for the analysis were the following:

   - the time horizon of the projections was the year 2001 in all but one of the Ontario studies (the Niagara Region data were to the year 1996);
   - the time horizon of the western New York study was very similar, ie, the year 2000;
   - the date of preparation of the projections were generally more recent than other projections;
   - the data take into account many of the key planning considerations, such as official plan designations, phasing, and projected rates of development;
   - the disaggregation of data by traffic zone greatly facilitated the allocation of the data by cells.

Traffic zone data were obtained from the following sources:

- Region of Peel
- City of Oakville (for Region of Halton)
- Region of Hamilton-Wentworth
- Region of Niagara
- Ministry of Transportation and Communications (for Twp. of Flamborough)

Traffic zone data were also obtained on a municipal boundary basis for the affected areas of western New York State.

The only area where population projections other than those contained in such studies were utilized was the Town of Dunnville, which lies outside the coverage of a recent regional traffic analysis. (See "Data Sources" for detailed references to these reports.)

2. Table 1 compares the current population projections which are still in official use in the Regions of Peel, Halton and Hamilton-Wentworth, with the cumulative totals for the traffic zones in each region. It can be seen that for these regions, the current "official" populations are higher than the traffic zone totals.

   In order to conform to the regional projections, and, concurrently, to take the most conservative approach to the study, it was decided to adjust the projections to fit with the regional data. This adjustment is described later in the methodology.

3. The Ontario Research Foundation provided 1:50000 scale base mapping showing the centroids of each of the candidate sites.

   The O.R.F. also provided a template of a grid showing concentric rings and sectors defining the cells to be used for the data (see Figure 1). The consultants plotted these on 1:50000 scale base maps, centring the grid on the centroids of the eight sites as follows:

TABLE 1

REGIONAL POPULATION PROJECTIONS

Region	Official Plan (a)	Traffic Zone Study (b)	Difference (a/b)
Peel (2001)	896 100 (Total Region)	864 600	+3.6%
	860 000 (Miss. & Brampton)	828 500	+3.8%
Halton (2001)	398 000	360 000	+10.5%
Hamilton-Wentworth (2001)	550 000	445 000	+23.6%
Niagara (1996)	N/A	378 700	-

20 km radius - LF-4N, PI-1N, PI-13N, LF-3C, LF-9C, LF-1E and PI-27E
5 km radius - LF-2N

Standard OWMC base maps were utilized for Ontario. The 20 km radius for sites LF-1E and PI-27E extended into western New York State; the Niagara and Erie County (NYS) civil division mapping was utilized for this area.

4. Traffic zones boundaries from the relevant studies were then superimposed on these maps.

5. The 1981 population estimates by IER for the four cells within the innermost 2 km rings (and for only these rings) are based on house counts obtained by roadside site investigations. The consultants utilized this data base in the present study because it is the most accurate data available for the base year.

   The 2001 projections for the 0-2 km cells were derived by factoring the 1981 population data by the rate of change projected for the traffic zones within which the cells were located. Where the cells fell partly within two or more traffic zones with different rates of change, an average rate of change was applied. (The cells within a 2 km radius are all areas of very low population and rates of population change.)

6. Future population projections (variously for the years 2001, 2000 or 1996, depending on the data source) were estimated by cell for the remaining rings. Where only part of the population of a traffic zone was assigned to a cell, reference was made to the Residential Land Use mapping of the LKA/MMM Phase 3B report and, where necessary, to the area municipalities' official plans and secondary plans. The distribution and density of existing and future residential uses shown in these references was used as the base for determining the percentage of the future population of the zone to be assigned to each cell.

   It was assumed that the population of rural areas would change very little over the period 1981-2001 and that most increases would occur in areas designated for urban residential development in official plans.

7. In the Town of Dunnville, population projections for the municipality as a whole were utilized and allocated based on the 1981 cell population estimated by IER.

. The resulting projections by cell for the 2-20 km rings were compared with IER 1981 data to identify any disproportionate changes in population. Where apparent discrepancies were noted, the assumptions made regarding the allocations of traffic zone populations to cells were re-examined and, where justified by the data, were adjusted.

(A number of population shifts remain which are larger than had been expected. These are discussed later in this report.)

8. As noted in step 2, the current regional population projections for Halton, Peel and Hamilton-Wentworth Regions are higher, respectively, than the total of the projections for all the traffic zones. In order to reflect the most conservative approach to the projection, it was deemed desirable to adjust the sector projections to reflect the higher regional figures.

The population projections have, therefore, been adjusted upwards on a cell-by-cell basis, by the factor by which the official regional population exceeds the total 2001 population of all the traffic zones in the region (see Table 1). In the case of Peel, only the municipalities of Mississauga and Brampton were considered, as Caledon is beyond the 20 km ring. The factors are +3.8% for Peel (Mississauga and Brampton), +10.5% for Halton and +23.8% for the Region of Hamilton-Wentworth.

9. The population projections for the Niagara Region are for the year 1996. In order to project the population projections to the year 2001, the data for each traffic zone, or part of a zone comprising each cell was projected for 1996-2001 at the same rate of change as projected in the Niagara Region Transportation Plan Review (NRTP) for the period 1986-1996.

As the traffic zone projections in Niagara Region are also the most recent available regional population estimates, no further adjustment was deemed necessary.

10. The year 2001 estimates for the western New York municipalities were determined by applying the average annual rate of change for the preceding twenty years to the year 2000 projections.

LIMITATIONS ON DATA

Ministry of Treasury and Economic Projections

The most recent population projections undertaken for the province as a whole and for counties and regions were prepared by the Ministry of Treasury and Economics. These projections were undertaken in 1979 and are based on 1976 census data.

In the absence of revised projections, the consultants examined the suitability of utilizing the set of 1979 projections which had proven most accurate in projecting the 1981 provincial population total and adjusting the 2001 projections by the difference between actual and projected populations in 1981, by region (see Appendix A).

In some instances, the 1981 estimates were close to the 1981 census data, but in the case of Peel, the difference was an underestimation of approximately 65 000 persons.

The resulting projections diverged greatly from more recent regional projections for the same or similar time periods. The consultants concluded that the Ministry projections, as modified, did not constitute a reliable confirmation of or check against the regional projections. The Ministry projections were therefore not utilized in the present study.

Regional Population Projections

The population projections for the Region of Halton were made in 1978 for the region's official plan. The region's planning staff are currently preparing new projections which should be ready late in 1984.

The projections for Peel and Niagara regions are of more recent vintage, having been prepared in 1982. The Peel projection has since been modified slightly (+0.1%) by the Region for current use.

The data for the Western New York State municipalities are based on preliminary population projections recently approved at a staff level for use in a regional transportation study. The projections may be subject to change prior to their official release.

Official Plan Population Projections

Official plans were utilized in determining future population growth areas within municipalities. Their usefulness in providing population projections was, with few exceptions, negligible. Many official plans particularly in the Niagara Region, have projections prepared in the early 1970's and are therefore unreliable. Some plans contain projections for only five year periods. Few plans break the projections down to units smaller than the municipality as a whole. Some area municipality plans and the Niagara Region plan contain no projections at all.

Differences with IER Methodology

Except within the inner 0-2 km ring, the methodology adopted by IER involved pro-rating the population between cells according to the percentage of the enumeration area falling within each cell. This is a valid approach given the small size, and therefore greater degree of homogeneity, of the enumeration areas and the cells used by IER.

The present report deals with much larger cells, some of which contain a variety of uses at different densities of development and with differing potential for future residential development. This methodology requires a greater degree of judgment to be exercised by the planner in allocating the population between cells. The allocation could not be done simply on the basis of pro-rating areas in such cases. Reference was made particularly to official plans to identify the areas where future population growth could be expected within the time horizon of the calculation.

In the aggregate, data differences resulting from this difference in methodologies will not be significant. However, there may be individual cells where an overly-large apparent population change may appear.

SUMMARY OF DATA SOURCES

Traffic Zone Data

The following sources of population projection data by traffic zone were utilized in this report:

Halton	o	Town of Oakville Transportation Study, September, 1984.
Hamilton-Wentworth	o	Revised Allocation of Population Projections to Traffic Zones, Planning and Development Department, April, 1984.
Niagara	o	Niagara Region Transportation Plan Review, Planning and Development Department, Regional Municipality of Niagara, April, 1982.
Peel	o	Waste Management Projection - Population, Socio-Economic Analysis Section, Planning Department, Regional Municipality of Peel, September, 1984.
Wellington (Township of Puslinch)	o	Ministry of Transportation and Communications, Traffic Zone Study, Highway 6 Realignment, 1982.
Niagara and Erie Counties (U.S.A.)	o	Preliminary projections for inter-country traffic study, September, 1984.

Population Projections

Halton	o	The Regional Plan, Official Plan for the Halton Planning Area, Regional Municipality of Halton, 1982.
Hamilton-Wentworth	o	Regional Municipality of Hamilton-Wentworth, Official Plan, September, 1982.

Mississauga	o	Regional Population Projections, Region of Peel, August, 1984.

Existing Population

- Institute of Environmental Research 1981 Population Estimates for Ontario Research Foundation.

Official Plans

The principal source of information on existing and designated residential areas was the "Residential Land Use" plan prepared as part of the Phase 3B report.

Supplementary information was obtained from the official plans for the following municipalities (reference should be made to the Phase 3B report to determine the correct reference where new official plan drafts are in preparation or in the approval process):

Regional Municipalities

Halton
Hamilton-Wentworth
Niagara
Peel
Haldimand-Norfolk

Area Municipalities (Ontario)

City of Brampton
City of Mississauga
Town of Caledon
Town of Oakville
Town of Milton
Town of Halton Hills

Town of Wainfleet
City of Fort Erie
City of Niagara Falls
City of Welland
Town of Port Colborne
City of Thorold

City of Burlington
Township of Puslinch
Township of Glanbrook
Township of Stoney Creek
Town of Lincoln
Town of West Lincoln
Town of Pelham
Town of Niagara-on-the-Lake
Town of Dunnville

Area Municipalities (New York State)

City of Tonawanda
Town of Tonawanda
City of North Tonawanda
Town of Wheatfield
City of Niagara Falls
Town of Niagara
Village of Lewiston
Town of Lewiston
Town of Grand Island

Secondary Plans - City of Mississauga

East Credit
Hurontario
Meadowvale Village

SUMMARY TABLES OF POPULATION PROJECTIONS

SITE: LF-4N

Cell Number	1981 IER Estimate	2001 Unadjusted Projection	Adjustment to Regional Projections		2001 Adjusted Estimate
1.	13	13		10.5%	14
2.	670	804		10.5%	888
3.	3 149	4 751		10.5%	5 250
4.	114 796	247 046	38 822	10.5%	259 034
			208 224	3.8%	
5.	42	43		10.5%	48
6.	430	536		10.5%	592
7.	1 609	8 833		10.5%	9 760
8.	158 887	219 748		10.5%	242 822
9.	46	47		10.5%	52
10.	499	940		10.5%	1 039
11.	3 008	4 499		10.5%	4 971
12.	23 022	16 032	13 756	23.6%	19 517
			2 276	10.5%	
13.	20	21		10.5%	23
14.	3 371	4 284		10.5%	4 734
15.	16 703	16 912		10.5%	18 688
16.	11 912	13 717	13 184	10.5%	15 227
			533	23.6%	
	330 177	538 226			582 659

NOTES

- o Year 2001 Unadjusted Projection data has been compiled by traffic zone from the following sources:
  - Town of Oakville Transportation Study (for Halton)
  - Region of Peel Planning Department
  - MTC Highway 6 Realignment study (for Hamilton-Wentworth)
- o The adjustments to bring the traffic zone totals up to current regional population projections are:

Halton	+10.5%
Peel	+ 3.8%
Hamilton-Wentworth	+23.6%

SITE: PI-1N

Cell Number	1981 IER Estimate	2001 Unadjusted Projection	Adjustment to Regional Projections		2001 Adjusted Estimate
1.	57	59		10.5%	65
2.	251	391		10.5%	432
3.	2 820	6 908		10.5%	7 633
4.	114 526	336 412	310 699	3.8%	350 919
			25 713	10.5%	
5.	63	65		10.5%	72
6.	367	397		10.5%	439
7.	1 994	40 632		10.5%	44 898
8.	91 217	172 687		10.5%	190 819
9.	39	40		10.5%	44
10.	679	392		10.5%	433
11.	2 500	3 740		10.5%	4 133
12.	24 096	32 937	541	--	37 420
			8 260	23.6%	
			24 136	10.5%	
13.	24	25		10.5%	28
14.	3 252	3 950		10.5%	4 365
15.	19 591	21 616		10.5%	23 886
16.	16 255	32 169	121	--	35 532
			33	3.8%	
			32 015	10.5%	
	277 731	652 420			701 118

NOTES

- Year 2001 Unadjusted Projection data have been compiled by traffic zone from the following sources:
  - Town of Oakville Transportation Study (for Halton)
  - Region of Peel Planning Department
  - MTC Highway 6 Realignment study (for Hamilton-Wentworth)

- The adjustments to bring the traffic zone totals up to current regional population projections are:

Halton	+10.5%
Peel	+ 3.8%
Hamilton-Wentworth	+23.6%

SITE: PI-13N

Cell Number	1981 IER Estimate	2001 Unadjusted Projection	Adjustment to Regional Projections		2001 Adjusted Estimate
1.	76	77		10.5%	85
2.	537	861		10.5%	951
3.	45 875	140 786	490	10.5%	146 168
			140 296	3.8%	
4.	316 952	337 492		3.8%	367 782
5.	86	89		10.5%	98
6.	294	1 239		10.5%	1 369
7.	21 091	54 260		10.5%	59 957
8.	85 076	119 115	111 560	10.5%	131 115
			7 555	3.8%	
9.	38	39		10.5%	43
10.	261	278		10.5%	307
11.	6 372	8 299		10.5%	9 170
12.	79 995	74 968	72 018	10.5%	83 226
			2 950	23.6%	
13.	76	78		10.5%	86
14.	261	640		10.5%	707
15.	19 240	23 251	19 526	10.5%	25 318
			5 792	3.8%	
16.	25 679	48 730	39 030	10.5%	51 967
			8 839	3.8%	
	601 355	827 028			878 349

NOTES

- o Year 2001 Unadjusted Projection data have been compiled by traffic zone from the following sources:
  - . Town of Oakville Transportation Study (for Halton)
  - . Region of Peel Planning Department
  - . MTC Highway 6 Realignment study (for Hamilton-Wentworth)
- o The adjustments to bring the traffic zone totals up to current regional population projections are:

Halton	+10.5%
Peel	+ 3.8%
Hamilton-Wentworth	+23.6%

SITE: LF-2N

Cell Number	1981 IER Estimate	2001 Unadjusted Projection	Adjustment to Regional Projection	2001 Adjusted Estimate
1.	9	0	3.8%	0
2.	1 997	1	3.8%	1
3.	-	-	-	-
4.	-	-	-	-
5.	36	10	3.8%	10
6.	427	14 500	3.8%	15 051
7.	-	-	-	-
8.	-	-	-	-
9.	51	46	3.8%	48
10.	1 049	9 026	3.8%	9 369
11.	-	-	-	-
12.	-	-	-	-
13.	33	613	3.8%	636
14.	14 240	34 592	3.8%	35 906
15.	-	-	-	-
16.	-	-	-	-
	17 842	58 788		61 021

NOTES

- Data have been compiled only within a 5 km radius of LF-2N as no incinerator is proposed for this site.

- Year 2001 Projection data are unadjusted as compiled by traffic zone from data provided by the Region of Peel Planning Department.

- The adjustment to bring the traffic zone totals up to current regional population projections for for the southern part of the Region of Peel, i.e., Mississauga and Brampton, is +3.8%.

SITE: LF-3C

Cell Number	1981 IER Estimate	1996 Projection	2001 Adjusted Estimate
1.	38	39	39
2.	312	291	293
3.	1 758	1 491	1 499
4.	18 591	16 529	16 704
5.	54	55	56
6.	326	568	585
7.	1 224	1 523	1 563
8.	5 358	5 058	5 141
9.	46	47	47
10.	356	490	508
11.	1 334	1 312	1 377
12.	9 740	10 279	10 739*
13.	42	43	43
14.	315	323	326
15.	1 212	1 122	1 124
16.	6 190	6 501	6 500*
	46 896	45 703	46 544

NOTES

- o Year 1996 Projection data are unadjusted as compiled by traffic zone from the Niagara Region Transportation Plan Review, April 1982.

  The 1996 - 2001 estimate for each cell is based on the projected growth rate/rate of decline for the preceding ten years for the traffic zones comprising each cell.

- o The growth rate of the Niagara Region between 1986 - 1996 is projected at 1.5% for the decade. The consultants estimated growth rate for 1996-2001 is 0.75% for the five years for the region as a whole.

- * The growth rates for municipalities in this table outside Niagara Region are as follows:

Stoney Creek Growth Rate 1982-2001 = 40.9%
Estimated 5 Year Growth = 10%

Glanbrook Growth Rate 1982-2001 = -6.1%
Estimated 5 Year Growth = -1.5%

SITE: LF-9C

Cell Number	1981 IER Estimate	1996 Projection	2001 Adjusted Estimate
1.	69	70	71
2.	336	410	413
3.	1 745	2 071	2 081
4.	24 009	21 876	21 087
5.	29	30	30
6.	381	607	612
7.	2 613	1 931	1 941
8.	44 584	48 743	50 443*
9.	29	30	30
10.	310	501	505
11.	1 364	1 105	1 118
12.	10 469	10 684	11 195*
13.	58	59	60
14.	335	456	460
15.	2 620	2 239	2 247
16.	24 304	18 860	20 552
	113 255	109 672	112 845

NOTES

- Year 1996 Projection data are unadjusted as compiled by traffic zone from the Niagara Region Transportation Plan Review, April 1982.

  The 1996 - 2001 estimate for each cell is based on the projected growth rate/rate of decline for the preceding ten years for the traffic zones comprising each cell.

- The growth rate of the Niagara Region between 1986 - 1996 is projected at 1.5% for the decade. The consultants estimated growth rate for 1996-2001 is 0.75% for the five years for the region as a whole.

* The 0.75% increase has also been applied to Dunnville, based on discussions with Regional Municipality of Haldimand-Norfolk planning staff, Sept., 1984.

SITE: LF-1E

Cell Number	1981 IER Estimate	1996/ 2000 Projection		2001 Adjusted Estimate
1.	42	41		41
2.	362	246		243
3.	26 944	26 001		26 484
4.	149 132*	131 503	48 056 83 447*	132 530
5.	72	70		69
6.	312	336		332
7.	1 152	1 119		1 117
8.	26 839	23 946	12 488 11 458*	24 009
9.	92	90		89
10.	593	662		655
11.	30 683	32 366		32 044
12.	29 213	30 369		30 968
13.	53	52		52
14.	599	1 008		1 000
15.	8 510	6 449		7 318
16.	85 066	98 288		100 911
	359 664	352 546		357 862

NOTES

o Year 1996 Unadjusted Projection data have been compiled by traffic zone from the Niagara Region Transportation Plan Review, April 1982.

The 1996 - 2001 estimate for each cell is based on the projected growth rate/rate of decline for the preceding ten years for the traffic zones comprising each cell.

o The growth rate of the Niagara Region between 1986 - 1996 is projected at 1.5% for the decade. The consultants estimated growth rate for 1996-2001 is 0.75% for the five years for the region as a whole.

* U.S. data are for Year 2000.

SITE: PI-27E

Cell Number	1981 IER Estimate	1996/ 2000 Projection	2001 Adjusted Estimate
1.	24	21	21
2.	5 776	9 612	9 670
3.	71 723	65 697*	66 462
4.	106 114	96 579*	96 321
5.	53	48	48
6.	313	419	417
7.	2 022	971	947
8.	36 473	27 782*	27 904
9.	44	39	38
10.	452	327	323
11.	10 380	6 840	7 966
12.	54 369	63 175	63 147
13.	37	32	31
14.	780	1 055	1 166
15.	7 307	7 831	8 854
16.	109 025	120 902	124 736
	404 892	401 330	408 051

NOTES

- o Year 1996 Projection data are unadjusted as by traffic zone from the Niagara Region Transportation Plan Review, April 1982.

  The 1996 - 2001 estimate for each cell is based on the projected growth rate/rate of decline for the preceding ten years for the traffic zones comprising each cell.

- o The growth rate of the Niagara Region between 1986 - 1996 is projected at 1.5% for the decade. The consultants estimated growth rate for 1996-2001 is 0.75% for the five years for the region as a whole.

* U.S. data are for Year 2000.

FINDINGS AND CONCLUSIONS

The following findings and conclusions are derived from the population projection summary tables:

1. Highest existing populations (1981 IER estimates) within a 20 km radius of the candidate site centroids are found around PI-13N (601 355), which includes substantial portions of Mississauga, Brampton, Oakville and Milton, and PI-27E area, which includes the cities of Niagara Falls, Ontario and New York (404 892).

2. Lowest existing (1981) populations within a 20 km radius of the site centroids are found in the vicinity of LF-3C (46 896) and LF-9C (113 255), both located in generally rural portions of West Lincoln. The latter site includes most of the City of Welland. The population totals for LF-2N include only those lands within a 5 km radius of the site centroid, which accounts for the relatively small population tabulation.

3. By the year 2001, the highest populations are projected to be in the vicinity of the northern candidate sites, including PI-13N (878 349), PI-1N (701 118), and LF-4N (582 659), due to substantial growth forecasts for the Peel and Halton regions.

4. By the year 2001, the lowest populations are projected to occur in the vicinity of the two central sites, LF-3C (46 542) and LF-9C (112 845), and LF-1E (357 862) in the Niagara Falls area.

5. In terms of overall population growth rates as projected for the 20 km areas around each site, the highest increases are projected for the northern candidate sites, including PI-1N (+152%), LF-4N (+76%) and PI-13N (+46%). LF-2N has a projected growth rate of 242% for the population within 5 km of the site centroid.

6. Low population growth rates to the year 2001 are projected for the Niagara Falls area site PI-27E (+1%).

7. Negative growth rates (declines) are projected for the two central sites, LF-3C and LF-9C (both to decline by less than 1% to 2001), and LF-1E (.5%). It is noted that LF-1E includes many rural areas and built-up sections of urban centres such as St. Catharines and Niagara Falls, N.Y., among others, which are projected to experience a decline in population by the year 2001, largely due to the continuing trend to smaller household sizes and net out-migration.

POPULATION PROJECTION BY MUNICIPALITY

The following table sets out, for comparison purposes only, the future populations by municipality on which the projected 2001 populations for the ORF cells are based. Note that the data are for the years 1996 and 2000 in the regions for which year 2001 populations are unavailable.

Region of Peel - 2001 Projections

City of Brampton - 238 000
City of Mississauga - 572 000

Region of Halton - 2001 Projections

Town of Oakville - 141 000
City of Burlington - 170 000
Town of Milton - 37 000
Town of Halton Hills - 50 000

Region of Hamilton-Wentworth - 2001 Projections

Township of Flamborough - 32 100
Town of Stoney Creek - 93 100
Township of Glanbrook - 18 000

Region of Haldimand Norfolk - 2001 Projections

Town of Dunnville - 10 500/urban
7 300/rural

Region of Niagara - 1986 Projections

Town of Grimsby - 16 244
Town of Lincoln - 14 597
Town of Pelham - 12 045

Town of Niagara-on-the-Lake	-	12 531
City of St. Catharines	-	125 716
City of Thorold	-	17 655
City of Niagara Falls	-	72 967
City of Welland	-	46 106
City of Port Colborne	-	19 768
Town of Fort Erie	-	24 777
Township of West Lincoln	-	10 124
Township of Wainfleet	-	6 170

Western New York Municipalities - 2000 Projections

City of Tonawanda	-	16 510
Town of Tonawanda	-	64 348
City of North Tonawanda	-	36 418
City of Wheatfield	-	10 006
City of Niagara Falls	-	64 812
Town of Niagara	-	10 254
Town of Lewiston	-	13 657
Village of Lewiston	-	3 313
Town of Grand Island	-	19 096

DETAILED POPULATION PROJECTION METHODOLOGY

0-2 km METHODOLOGY

- Identify IER 1981 population estimate by LKA/MMM cells (16).
- Allocate IER estimate to traffic zones within each of cells 1, 5, 9 and 13 according to:
  - i) geographical location of cell, ie. the percentage of each cell which comprised each traffic zone (in most cases 100%).
  - ii) land use activities and designations, ie. any significant residential concentrations or other designation which may indicate a concentration of population within the cell.
- Calculate rate of growth/decline for traffic zones within each cell from traffic zone data, ie. 1978-1996 for Niagara, 1982-2001 for TOTS, and 1981-2001 for Peel.
- Apply the specific rate of growth/decline to the corresponding traffic zone allocation. Complete for all traffic zones with cell allocations.
- Add up allocations to obtain population projection for sector:
  - based on IER existing figures
  - projected by traffic zone rates of change

2-20 km METHODOLOGY

- Begin population projections by making necessary adjustments according to the 0-2 km data.
  - i.e., if 5% of a traffic zone is within 0-2 km circle, then 95% must be in one of the 2-20 km cells.

- For each of cells 1 to 16, excluding cells 1, 5, 9 and 13, tabulate the full and partial traffic zones within that sector. Partial traffic zones will be estimated based upon:

  i) geographical representation of cell using a visual check with no assumptions given.
  ii) land use activities and designations using official plan information and all assumptions given.

Worksheets contain:

- List of traffic zones (full and partial) for each cell with appropriate assumptions when required, and projected population figures.

Summary Sheets contain:

- IER existing population by cell.
- Unadjusted traffic zone projection.
- Adjustment factor.
- New adjusted population projection by cell.

APPENDIX J

APPENDIX J.1

PLANNED AND PROPOSED LAND USES: OFFICIAL PLANS (LOCAL AND REGIONAL) AND ZONING BY-LAWS

Introduction

This report presents the results of the land use consultant's analysis of official plans and zoning by-laws, which are indicators of the factor Planned and Proposed Uses. Meetings were held with the staff of municipalities and regional municipalities which have candidate sites within their boundaries, with the exception of the Region of Halton where a meeting could not be convened, and the City of Mississauga and the Region of Peel where meetings were not necessary due to the exclusion of candidate site LF-2N. As such, the following sections have been reviewed by the appropriate planning staff and modifications to the text have been made in response to their input. The report identifies municipal policies and plans, existing and pending, which should be addressed by OWMC.

The format of the report is as follows. The official plans for each of the three regions in which candidate sites are located are examined, followed by a discussion of the official plan of each of the area municipalities within the regions which are affected by the candidate sites and access routes. Each discussion commences by noting the status of the plan (eg. approved, approved only by Council, draft, etc.) and the relevant designations within the plan. Official plan provisions requiring a special approval process or setting development criteria are identified. Where amendments to the plans are required to permit the OWMC facility*, the nature of these amendments is described. Zoning designations are also examined in the three municipalities in which the candidate sites are located. Where municipalities were involved in the land use analysis only on the access routes, the zoning by-laws were not reviewed. Finally, the report assesses the potential degree of conflict which the plans and policies are expected to pose based on our review of the provisions of the plans.

---

* In describing the process, it is recognized that the OWMC is in all likelihood exempt from the provisions of the Planning Act. In carrying out the land use aspect of site selection however, official plan designations and existing land use were of paramount importance. It is therefore suggested that the degree of overall conformity to zoning by-laws and the various official plan requirements is significant.

The examination of environmentally significant factors including environmentally sensitive areas and floodplains was carried out by Gartner Lee Associates. Ecologistics Limited was responsible for the agricultural related land use analysis.

REGIONAL MUNICIPALITY OF PEEL

STATUS OF OFFICIAL PLAN

The Official Plan for the Region of Peel has not been adopted by Regional Council or approved by the province. The consultants' comments refer to Draft "C" of the Official Plan, dated December, 1982. The preamble to the plan notes that it is based on approved legislation and Council policy positions as of August 31, 1982. It has not been revised since that date. There was no previous Regional Official Plan in place prior to the current draft Official Plan.

RELEVANT DESIGNATIONS

The relevant designations in the Regional Plan are:

- Long-Term Urban Boundary
- Industrial
- Waste Management

Long-Term Urban Boundary

Schedule A, Long Term Land Use Plan, of the Official Plan defines the limits of urban development for the long-term.

Candidate site **LF-2N** is located outside the boundary of urban development.

Industrial

The Industrial designation accommodates primarily industrial uses but also permits all other land uses, other than regional shopping centres, which conform to area municipality official plans (Section 3.4.5).

Waste Management

The Long-Term Land Use Plan designates a site on Britannia Road for Waste Management uses, ie. the receiving, dumping and disposing of solid and other wastes, and sets out policies in subsequent sections (Section 3.4.6). The location of the site does not correspond with any of the OWMC candidate sites.

Waste originating from municipalities or jurisdictions outside the Peel planning area shall not be disposed of at a sanitary landfill site within Peel Region unless approved by Regional Council (Section 4.5.2.1).

The plan also sets out policies based on objectives which include supporting programs aimed at the control and safe disposal of liquid wastes, as detailed in the following quotations:

> "The Region of Peel acknowledges that certain industrial and commercial liquid wastes will be generated which fall into the classification of Hauled Sewage, Hauled Liquid Industrial Waste and/or Hazardous Waste. The Region of Peel shall support the establishment of facilities for treatment and disposal of these wastes that are environmentally sound and compatible with the land use policies of this plan. All such facilities are subject to regulations under The Environmental Protection Act, 1971. In addition, any lands used for purposes of treatment and/or disposal of Hauled Sewage, Hauled Liquid Industrial Waste and/or Hazardous Wastes shall be subject to the restrictions, as to location, defined in subsection 4.5.5, Waste Processing Plant" (Section 4.5.2.3).

> "Hazardous Waste, Hauled Liquid Industrial Waste or Hauled Sewage shall not be disposed of at a sanitary landfill site" (Section 4.5.3.11).

The plan sets out a number of constraints to be recognized in the location of future **sanitary** landfill sites.

- existing and identified urban areas and urban buffers
- committed urban and settlement areas

- potential settlement areas
- provincial planning constraints
- unsuitable hydrological conditions
- major recreation open space.

Agricultural Resource

The region encourages the protection of lands identified as Agricultural Resource areas on Schedule D, from competing land uses in order to allow options to remain open as to where future agriculture may take place. Site LF-2N is so designated (Section 3.8.2.1).

A number of compatible land uses, such as uses in support of agriculture and uses which, although not related to agriculture, can continue without conflict to agriculture and will permit the land to be used for food production in the future (Section 3.8.3).

Applications for changes in land uses which are not considered compatible will be reviewed on the basis of:

- necessity for the land use
- the amount of land needed
- the reasons given for the choice of location
- the consideration given to alternate locations of lower capability Agricultural lands (Section 3.8.4).

Waste Processing Plant

Waste Processing Plants are to be permitted in the City of Mississauga and the Town of Caledon only by an amendment to the area municipal official plans (Section 4.5.5.2).

A Waste Processing Plant will be included as a permitted use in the zoning by-law of each area municipality either as a permitted use within an existing zoning category or on the basis of a site specific zoning category (Section 4.5.5.3).

STAFF COMMENTS

The consultants have been advised by Peel planning staff that the Long-Term Urban boundary will be affected by any change in the Region Plan related to the Derry East Business Park Secondary Plan, within which the candidate site is located. The region planning staff advised that they do not have a position at this time with respect to the redesignation of this area as Industrial in the Region Plan; the long-term supply of industrial land will be a consideration in their determination.

CONCLUSION

If the draft Peel Official Plan is adopted in its present form, amendments will be required to the Regional Plan to designate the Mississauga site **LF-2N** for "Waste Management" uses.

Although **LF-2N** is within an area proposed by the city for industrial development, it appears that the region's position on its final designation has not been determined. If the region opposes the inclusion of LF-2N within the urban area, then reference will have to be made to the rural policies of the region plan; these policies are very general and give little guidance regarding this type of use. The site is indicated as within the agricultural resource areas of the region and, therefore, presumably, considered as prime agricultural land.

SOURCES

City of Mississauga, Derry East Business Park Secondary Plan (1982)
City of Mississauga, Derry Secondary Plan Approved Draft (1985)
Regional Municipality of Peel, Official Plan Draft (1982)

CITY OF MISSISSAUGA

A. PRIMARY OFFICIAL PLAN

STATUS

The Primary Plan for the City sets out the overall urban structure and generalized land uses for the City of Mississauga. It establishes a framework for the approximately 40 secondary plans, most of which are now in place, which set out the detailed land use controls. The Primary Plan was approved in part by the Minister in 1981 and subsequently in part by the Ontario Municipal Board in 1982.

RELEVANT DESIGNATIONS

Candidate site **LF-2N** is located within the Special Policy Area. The access roads are also contained within this designation. There is also a Waste Management designation.

Special Policy Area

The Land Use Long Term Concept Plan, Schedule 11, designates an area either side of Highway 10, from Highway 401 north to the Mississauga - Brampton boundary as a Special Policy Area. Site **LF-2N** is located within this area. According to Section 5.10 of the Plan, uses are limited to open space and recreational uses, but provision is made for studies to be undertaken from time to time to determine whether part or all of the area should be designated for industrial, open space or privately operated recreation uses.

Waste Management

There is a Waste Management category in the Land Use Long Term Concept. It designates a Regional sanitary landfill south of Britannia Road, some distance from the candidate site.

LIQUID WASTE DISPOSAL POLICIES

The establishment and operation of facilities for hauled liquid industrial waste/hazard waste is subject to a number of policies (Section 4.9.7.2).

These include:

- location and operation of such facilities subject to Ministry of Environment approval.
- requirement for amendment to the Official Plan and Zoning By-law.
- establishment of need to serve the City, and the degree of which the facilities would serve areas outside the City.
- location only on lands designated for General Industrial or Heavy Industrial uses.
- planning, designing, operation and maintenance of facilities to ensure compatibility with adjacent, existing and future land uses and minimal adverse impact on the environment.

ENVIRONMENTAL PLANNING AREAS

The Environmental Planning Areas map shows a small portion of the site designated as environmental policy area B. This indicates an area of lesser environmental significance into which some urban uses can be integrated, subject to requirements of the city and other appropriate public agencies.

B. DERRY EAST BUSINESS PARK SECONDARY PLAN

STATUS

The Secondary Plan was prepared in November, 1982. Upon the advice of city planning staff, obtained at meetings with staff in mid-1983, the consultants have utilized this plan, rather than the Primary Plan, as the basis for land use designations and policies. The status of the secondary plan is contingent to some extent on the proposal for a domed stadium on the west side of Hurontario Street, which, if successful, would redefine parts of the Derry East Plan. We understand that further processing of this Secondary Plan is being held pending the decision on the domed stadium proposals*.

CITY STRUCTURE

The Derry East Plan will have the effect of amending the City Structure plan to create a new industrial district and to delete the Special Policy Area designation as it affects the new district.

INDUSTRIAL DESIGNATIONS

As proposed by the Derry East Secondary Plan, site **LF-2N** would include lands within both of the two proposed industrial designations, Prestige and General Industrial.

General Industrial

This designation permits industrial uses within enclosed buildings, including manufacturing, processing, warehousing and wholesaling. Limited offices and open storage, directly related to the industrial uses, are also permitted, as are transportation depots, sports facilities, restaurants, other office uses and highway commercial uses (Section 3.4.1.2.1).

---

* Mississauga City Council approved in April 1985 a draft secondary plan for the Derry Secondary Planning Area which has replaced the lands designated for a stadium with prestige industrial including an office component; however, this plan was not utilized in the land use analysis.

Uses "likely to cause air pollution, odour, water pollution or noise" are prohibited in the General Industrial areas adjacent to Prestige Industrial Areas (Sections 3.4.1.2.2).

Enterprises requiring large areas for outdoor storage will be confined to selected locations remote from view (Section 3.4.1.2.2 (c)).

Prestige Industrial

Land designated for this use will be used for industrial, office and related uses. The range of uses is similar to that for General Industrial, except that there are more stringent design controls and less restrictions on the total amount of office space (Sections 3.4.1.1.1 and 2).

Uses likely to cause air pollution, etc., are prohibited (Section 3.4.1.1.2 (b)).

PUBLIC WORKS

All development is to be on the basis of full services (Section 3.7).

HERITAGE

Every effort is to be made to preserve structures listed on the City's Heritage Inventory. The **LF-2N** site includes a listed house on Highway 10.

ZONING BY-LAW

STATUS

The current zoning by-law is By-law 5 500, as amended, approved in 1965 as the zoning by-law of the former Township of Toronto (Town of Mississauga). There is no zoning designation which permits a waste disposal site other than at the location occupied by the Region of Peel south of Britannia Road.

Permitted Uses

The site of **LF-2N** is zoned A - Agriculture, which permits agricultural, recreational, institutional and limited commercial and residential uses.

The corner of Highway 10 and Derry Road is zoned AC-6 - Automobile Commercial. A Gulf gas station coincides with this zoning.

CONCLUSION

The OWMC facility does not comply with the uses permitted in the Special Policy Area of the Primary Plan. If the site were to be redesignated, it would have to be within the context of a Secondary Plan for a larger area, such as the Derry East Plan.

The Official Plan requires proof of the need for a hazardous waste treatment facility to serve the city. As only a small quantity of the liquid industrial waste will have its origin in Mississauga, this policy may be used as a basis for opposing planning approval for **LF-2N.**

OWMC facilities would not conform to the present zoning requirements.

While the domed stadium proposal is reflected on the planning status maps, the consultants understand from city staff that the draft Derry East Plan will replace the lands designated for the stadium with prestige industrial and office components. These uses will be perceived to have a high degree of conflict with the OWMC landfill facility.

However, the proposed designation of site **LF-2N** for industrial uses in the draft Derry East Plan may outweigh the effect of other Official Plan policies which could be used to oppose OWMC facilities on this site.

SOURCES

City of Mississagua, Official Plan (1980)

City of Mississauga, Derry East Business Park Secondary Plan Unapproved Draft (1982)

City of Mississagua, Derry Secondary Plan Approved Draft (1985)

City of Mississauga, By-law No. 5500 as amended, Office Consolidation (1979)

Ministry of Municipal Affairs and Housing, The Parkway Belt West Plan (1978)

CITY OF BRAMPTON

A. OFFICIAL PLAN

STATUS OF OFFICIAL PLAN

The City of Brampton Official Plan was approved by the Province on January 4, 1984. The Plan sets out the principal land uses and provides for the adoption of secondary plans where required to set out a greater level of detail.

RELEVANT DESIGNATIONS

The most relevant designations in the City of Brampton Official Plan are those to the north-west of candidate site **LF-2N**. These are:

- Parkway Belt West
- Residential
- Commercial

Parkway Belt West

The Parkway Belt designation coincides with the limits of the Parkway Belt West Plan and complies with the provincial policy. In this section, the Parkway Belt is primarily a road and HEPC corridor (Section 2.9).

Residential

The land use designation immediately north of the Parkway Belt on either side of Highway 10 is Residential. The Brampton Plan provides for the adoption of secondary plans for all residential and industrial areas so as to indicate densities and community structure in greater detail (Section 7.2.1).

Commercial

A commercial centre is designated on Highway 10 in the centre of this residential community.

B. FLETCHERS CREEK SOUTH SECONDARY PLAN

The detailed Secondary Plan which covers the area closest to **LF-2N** in Mississauga is the Fletchers Creek South Secondary Plan (in the City of Brampton), which was approved as O.P.A. #61 to the former city Official Plan by the OMB in 1982 and which has been carried over into the new Plan (Section 7.2.7.24).

RELEVANT DESIGNATIONS

The Fletchers Creek South Plan employs the following principal designations nearest the Parkway Belt:

- Low and Medium Density (residential)
- Commercial
- Institutional

Low and Medium Density (residential)

The housing mix provided for in the secondary plan is:

- 40% single and semi-detached
- 30% townhousing and medium density (36-50 units/net ha)
- 30% apartment (76-100 units/net ha) (Section 5.2).

The density target for the overall Fletchers Creek South Area is 27.9 units per gross residential hectare; the density immediately north of the Parkway Belt will be substantially less than this because of the absence of apartment designations in the southern third of the planning area (Section 5.3).

The projected population is 23,501 persons.

Commercial

Neighbourhood commercial, highway commercial, and office uses and a cultural and entertainment complex are planned for the centre of the Plan, on Highway 10.

Institutional

The Plan designates sites for provincial courts, police headquarters and a community service complex.

ZONING BY-LAW

The Zoning By-law was not reviewed.

CONCLUSION

The Fletchers Creek South Secondary Plan provides for the eventual development of a residential community of 23,501, with community services and a number of regional facilities, within 1 to 3 km of candidate site **LF-2N.** This large population may be a concern to OWMC, even though **LF-2N** is being considered only as a landfill and possibly physical/chemical treatment plant site.

SOURCES

City of Brampton, Official Plan of the City of Brampton Planning Area, Office Consolidation (1984)

City of Brampton, Official Plan Amendment Nos. 1 (1977), 4 (1979), 6 (1979), 36 (1984) and 61 (1982)

REGIONAL MUNICIPALITY OF HALTON

STATUS OF OFFICIAL PLAN

The Region of Halton Official Plan was approved in part by the Minister in 1980, with modifications. Subsequently, additional sections of the Regional Official Plan have been approved by the Minister or the OMB. No previous Regional Official Plan was in place prior to this plan.

RELEVANT DESIGNATION

The three candidate sites, **PI-1N, PI-13N and LF-4N,** within the region are all located within the Rural area. The regional access routes will pass through the Rural, Parkway Belt Extension and Urban Area designations (Map 1).

The principal land uses designated in the Regional Concept Plan are:

- Rural Area
- Niagara Escarpment
- Parkway Belt
- Urban Area

Rural Area

The principal goal and the objectives of the Plan with respect to agricultural lands are:

- To develop and maintain a permanently secure, economically viable agricultural industry as an important component of Halton's economic base, and as a source of employment for Halton's rural community (Part II 3D.G1).

- To preserve prime agricultural soils as a natural resource.

- To protect farms where possible from activities and land uses which would limit productivity or efficiency (Part II 3D.04).

The Region's Resource Management Policies support non-farm development on farm lands only where it can be shown that:

- The development is compatible with existing and potential farm operations.
- Every reasonable effort has been made to preserve Prime Agricultural Soils.
- Detailed studies prove that the lands are better suited for non-farm uses.
- The development is in conformity with the policies of the Region and area municipality plans.

Niagara Escarpment/Parkway Belt

The effect of the above-noted designations is to implement the provincial policies from which they derive their titles. Residential development is severely restricted by both designations (Part III B1 and B2). **LF-4N** is the closest of the three sites to the Niagara Escarpment designation. **P1-1N** abuts the Parkway Belt.

Urban Area

Access routes pass through the urban areas of Oakville en route to the QEW. There are no specific policies which would affect the access routes.

Hazard Lands

Hazard Lands are shown separately on Map 5. The designation overlaps with the desigations shown on the Regional Concept Plan. All three sites are partially covered by this designation, which contains a set of policies related to the protection of flood plans and restriction of development within areas subject to flood hazard or erosion.

WASTE MANAGEMENT POLICIES

The Regional Plan sets out a number of policies for solid waste management. Most of the policies have not yet been approved as part of the Official Plan. None of the policies are directed at liquid waste treatment or disposal (Part III D3).

The Official Plan states a preference that landfill sites be located on land less suited to other purposes such as agriculture, but recognizes that the nature of the operation of landfills may necessitate locations which may make this impossible (Part III D3.9).

The site selection requirements are as follows:

"Select landfill sites ... on the basis of comparative studies which will, among other things, examine the **social, economic** and **environmental impact** of each site, and take into consideration **the views of affected citizens** and **any other matters as determined by Regional Council**" (Part III D3.7a).

It should be noted that the two sections referenced above have both been referred by the Minister of Municipal Affairs and Housing at the request of the Tremaine Britannia Citizens Group, who are opposing the Halton Region sanitary landfill project.

ENVIRONMENTALLY SENSITIVE AREAS (ESA)

Site **PI-13N** abuts ESA No. 16, Sixteen Mile Creek Valley, which is designated as a Major Groundwater Discharge Area. Environmental Impact Assessments are required for proposals adjacent to ESA's (Part IV G1.6). Therefore, an environmental assessment will be required for **PI-13N**.

CONCLUSION

The Regional Official Plan does not specifically require an amendment to permit OWMC facilities at any of the three sites. There is no specific land use designation or symbol which would need to be added by amendment to any of the plans contained within the Official Plan to accommodate OWMC facilities.

The existing policies of the Plan with respect to the preservation of agricultural lands will also have to be addressed as these policies discourage the introduction of non-farm uses in agricultural areas. The policies do not, however, appear to require amendment if the criteria noted under Rural Area policies are met.

The Region may add policies for liquid waste management facilities to Section III D3 which would have an effect similar to that specified for the selection of landfill sites, should that section be approved.

Finally, if site **PI-13N** is selected, there is a requirement that an Environmental Impact Assessment for the project be undertaken using guidelines prepared by the Region, the Halton Ecological and Environmental Advisory Committee, and appropriate provincial agencies.

In summary, although the Halton Official Plan may not require amendment, it contains policies which should be of concern to OWMC.

SOURCES

Regional Municipality of Halton, The Regional Plan, Office Consolidation (1982)

CITY OF BURLINGTON

STATUS OF OFFICIAL PLAN

The current policies of the City's Official Plan for that part of the City north of Highway No. 5 are contained in Amendment No. 81 as amended, which was approved in part by the Minister in 1978, 1981 and 1982, with remaining sections approved by the OMB in 1979 and 1980.

Candidate site **LF-4N** abuts the City of Burlington and **P1-1N** lies approximately 2 kilometres to the north-east of the city limits. (The third site, **P1-13N**, lies considerably further to the east.)

RELEVANT DESIGNATIONS

The only designation relevant to OWMC candidate sites or access routes is the Agricultural category.

Agricultural

The land use designation lying closest to the two candidate sites near the municipal boundary is Agriculture. The Official Plan does not differentiate between rural and agricultural designations.

The essence of the policies is as follows:

- The Agriculture designation is primarily for agricultural, forestry, recreational and similar uses.
- Rural residential uses are permitted in areas designated for Agriculture subject to certain conditions, such as a 20 ha minimum lot size. Direct access to major roads is to be limited.
- There are no specific references to waste management uses or policies.

ZONING BY-LAW

The zoning by-law was not reviewed*.

CONCLUSION

OWMC facilities on any of the three sites in the adjacent Town of Milton will not require amendment to the Burlington Official Plan.

SOURCES

City of Burlington, Official Plan Amendment No. 81 as amended (1982)

---

* Burlington's By-law No. 1642 was reviewed in context with the former Town boundaries that included the LF-4N lands.

TOWN OF MILTON

STATUS OF OFFICIAL PLAN

The new Official Plan for the Town of Milton was approved, with modifications, on December 6, 1984.

RELEVANT DESIGNATIONS

The designations potentially relevant to OWMC candidate sites and access routes are:

- Agriculture
- Waste Disposal Site
- Niagara Escarpment
- Parkway Belt
- Rural Clusters
- Milton Urban Area
- Industrial
- Conservation and Hazard Lands

Agriculture

Sites **LF-4N, P1-1N** and **PI-13N** all fall within the Agriculture designation.

The Agriculture designation reserves land for uses which are primarily agricultural in nature or which support the farming community, such as general stores, garages, implement dealers, and similar uses (Section 4.1.1.). (The Plan also contains a Rural designation which is more permissive, as it allows rural residential uses.)

Estate residential development is permitted only in Rural areas (Section 5.1.2). Severances for residential lots are permitted in Agricultural areas, but are subject to restrictive criteria (Sections 4.2.1 and 4.3.1).

Waste Disposal Site

Section 4.1.4. states that "A Sanitary Landfill Site to be controlled and operated by the Regional Municipality of Halton is permitted at the north-west corner of Tremaine and Britannia Roads, located in Part Lots 6 and 7, Concession 7 N.S.". The location of the site is shown by symbol on the Land Use Plan - Schedule D. It is located within the bondaries of OWMC candidate site LF-4N.

Niagara Escarpment/Parkway Belt

The Niagara Escarpment Plan and Parkway Belt West Plans are recognized through corresponding designations in Milton's Official Plan. The sites do not fall within the areas designated as Niagara Escarpment or the Parkway Belt West proper however, **LF-4N** is both within Milton's West Future Urban Area as delineated in the Parkway Belt West Plan and 600 m of the Niagara Escarpment Rural Area. In addition, **PI-1N** and **PI-13N** are within the Milton West and East Future Urban Areas respectively. Further, the site of **PI-13N** is within 650 m of a major roadway identified in the Parkway Belt West Plan and as such, may represent an opportunity to provide more direct access to **PI-13N** through a major transportation corridor.

In short, the provisions of the Niagara Escarpment and Parkway Belt West Plans impact on the potential sites only is so far as the Parkway Belt West Plan may constrain selection by contemplating future urban areas east and west of the Burlington-Oakville mini-belt. Additionally, Subsection 6.3.2 h of the Parkway Belt West Plan may impact on the northern access route as a 15,000 - 20,000 population residential development is anticipated on the Shipp property between 3rd and 4th Lines north of Derry Road. It is important though to be aware that development of Milton's Future Urban Areas as reflected in the Parkway Belt West Plan as well as the Shipp lands will necessitate an amendment to the current local Official Plan and the Regional Plan which in turn is contingent on the availability and acceptability of servicing.

Rural Clusters

Boyne, Omagh, Drumquin and Agerton are designated as Rural Clusters, i.e. identifiable communities of 6 or more residential units plus one or more non-residential uses. Infilling development is permitted in areas so designated (Section 12.6.3.1).

Milton Urban Area

The Milton Urban Area is bounded on the southeast by Derry Road W., 2 km north of **PI-1N**. The Urban Area is substantially built up to Derry Road in residential uses. The Plan does not contemplate a further extension of the southeasterly limit of the Urban Area (Section 12.4). However, the Plan does provide for future designation, by amendment, of additional lands for low density urban residential use between Steeles-401, Derry Road, Thompson Road and 4th Line, subject to compatibility with neighbouring uses and availability of servicing (Section 12.4.1.2.).

Industrial

No noxious trade, business or manufacturing will be allowed in the municipality. Standards of industrial performance to minimize any obnoxious effect on the senses will be applied to such uses (Section 6.2.1). The designated industrial areas are all located within the Milton Urban Area, well removed from the candidate sites.

Conservation and Hazard Lands

All these sites include areas of Conservation and Hazard Lands, but not sufficient to impair siting of facilities.

PUBLIC WORKS

Water and sanitary sewers fall within the jurisdiction of the Region of Halton. The Plan therefore does not set out policies on these matters (Section 14.1.1).

ZONING BY-LAW

STATUS

The applicable Zoning By-law for sites **PI-1N** and **PI-13N** is the Town of Oakville's By-law No. 1965-136.

The applicable Zoning By-laws for site **LF-4N** are the Town of Burlington's By-law No. 1642, as amended by the Town of Milton's By-law No. 62-81*.

PERMITTED USES

Sites **PI-1N** and **PI-13N** are zoned A - Agricultural (Town of Oakville).

This designation permits agricultural uses, recreational uses, schools, churches, hospitals and a small number of minor uses. It does not permit landfill or waste treatment facilities.

Site **LF-4N** is zoned in part for "Sanitary Landfill" and the balance for A - Agriculture and Conservation (Town of Milton).

The Sanitary Landfill zoning permits the use of the land for or on behalf of the Regional Municipality of Halton for the purpose of disposing of waste by landfilling. The definition of waste specifically excludes liquid industrial waste and hazardous waste.

The Agricultural zone permits primarily farming and forestry. The Conservation zone refers to lands not suitable for normal agriculture or residential use due to the hazards of erosion, etc.

---

* The Town of Milton passed By-law No. 61-85, a new comprehensive Zoning By-law, on July 2, 1985. While this By-law represents a consolidation of all previous By-laws, the pertinent zoning revisions have no effect on the land use analysis of the candidate sites.

The general provisions of the By-law state that certain uses are not restricted by the By-law. These uses include "all publicly owned and operated property, except for a garage dump, public incinerator ... or other such public use".

CONCLUSION

The siting of OWMC facilities at any of the three proposed sites in the Town of Milton would not conform to the Official Plan or Zoning By-law. In the case of the Official Plan, significant amendments to the schedule and policies of the Plan would be necessary.

Both the existing and proposed Official Plans promote the continuation of agricultural uses on prime agricultural lands, such as those on which **PI-1N** and **PI-13N** are located.

LF-4N is in a different situation, as it is already designated for a sanitary landfill site in the approved Official Plan. However, as the proposed OWMC facility would involve the treatment and storage of hazardous wastes, it would not be in conformity with the Official Plan or Zoning By-law.

SOURCES

Ministry of Municipal Affairs and Housing, The Parkway Belt West Plan (1978)

Provincial Secretary for Resources Development, Niagara Escarpment Plan (1984)

City of Burlington, Official Plan Amendment No. 49, Office Consolidation (1983)

City of Burlington, Official Plan Amendment No. 81 as amended (1982)

City of Burlington, Zoning By-law 1642, Office Consolidation (1982)

Town of Milton, Official Plan Milton Planning Areas (1982)

Town of Milton, Zoning By-law No. 62-81 (1981)

Town of Milton, Zoning By-law No. 61-85 Approved Draft

Town of Oakville, Zoning By-law No. 1965-136 as amended (1983)

TOWN OF OAKVILLE

STATUS OF OFFICIAL PLAN

The present Town of Oakville Official Plan was approved in 1978. A revised Plan is currently awaiting approval of the Minister. Because the Plan only affects access routes to three Milton sites, reference is only made to the proposed Official Plan, dated May, 1983.

RELEVANT DESIGNATIONS

Access routes to candidate Sites **P1-1N, LF-4N** and **P1-13N** utilize Highway 25 north from the QEW to the town's north limit. Sites **P1-1N, P1-13N** and **LF-4N** lie approximately 2 kilometres north of the town.

This section of Highway 25 passes through the following designations, south to north:

- Parkway Belt West
- Regional extension to Parkway Belt
- Urban Residential (Phase 2 Urban Area)
- Agricultural
- Palermo Industrial - Tourist Special Study Area
- Parkway Belt West (second occurance)

The Palermo Special Study Area and Urban Residential designations are potentially the most significant designations (Figure C).

Palermo Industrial - Tourist Special Study Area

This area is not designated for specific uses because of "complexities of existing land use or the uncertainty of certain key land use or transportation elements". A special study, to be undertaken in preparation of a plan for this area, will consider the appropriateness of the following land uses:

- General Industrial
- Light Industrial
- Industrial Commercial
- Arterial Commercial, including hotel

Urban Residential

The Urban Residential area is designated Phase 2. It is not intended that urban development take place within the Urban Area Phase 2 until the Phase I area (generally south of Upper Middle Road) is developed to about 75% of its maximum potential (Section C.2).

According to the data provided in the General Policies section of the Plan, the total of existing and future residential development will support a total population of 200 000. The projected population by the year 2001 is 141 000 i.e., 71.5% of the potential capacity. The consultants therefore consider it unlikely that development will occur in Phase 2 before the year 2001.

Agricultural

Strip residential development is discouraged within this designation (Section D.7.1). New residential uses are permitted only under very severe restrictions, and only one lot at a time is permitted to develop (Section C.13.1).

Parkway Belt and Regional Extension

The Parkway Belt designations reflect the Provincial designation (Section E.5). The Regional Extension would permit the same uses as the Parkway Belt Complementary Use designtion.

ZONING BY-LAW

The zoning by-law was not reviewed*.

---

* Oakville's By-law No. 1965-136 was reviewed in context with the former Town boundaries that included the PI-1N and PI-13N lands.

CONCLUSION

The Urban Residential designation will permit a substantial amount of urban development, in addition to that already existing, along the proposed access route between the three Milton sites and the QEW. In addition, the possibility of arterial commercial uses in the Palermo area is also of concern.

SOURCES

Town of Oakville, Official Plan Draft (1983)

REGIONAL MUNICIPALITY OF NIAGARA

STATUS OF OFFICIAL PLAN

The Regional Niagara Policy Plan was approved by the Minister in part in 1978 and the balance by the OMB and Provincial Cabinet in 1981. Small portions of the Urban Areas Boundaries Map and the Agricultural Land Base Map are the only items not yet approved. They do not affect the four candidate sites designated within the region.

RELEVANT DESIGNATIONS

The relevant designations in the Region of Niagara Plan are:

- Urban Areas and Urban Study Areas
- Agricultural
- Rural

Urban Areas and Urban Study Areas

A key feature of the Regional Plan is the delineation of urban areas. Site **PI-27E** is within the Niagara Falls Urban Area. The access road runs along the boundary of the Urban Area. A number of reasons are stated for delineating the urban areas principal among which are:

- to protect the agricultural industry and its land resources (ie. by limiting extent of urban development)

- to protect the natural scenic amenities of the Region (Section 5).

Urban development is to be permitted only within the Urban Areas Boundaries and only when municipal services are adequate.

Urban study areas are villages and other small urban centres, the location of which are shown schematically.

In some instances, part of the urban areas are shown as deferred, signifying that their development is to await the substantial completion of urban development in the balance of the urban area (This does not affect site **P1-27E**).

Where discrepancies exist between the Regional and area municipal plans concerning limits of urban development, the Region Plan prevails and area plans are to be modified to conform.

Agricultural and Rural

The Niagara Plan differentiates between Agricultural and Rural areas on the basis of soil capability. As such, the plan emphasizes that agricultural uses should be encouraged and protected but that some non-farm development will be permitted in the Rural areas.

Agricultural areas include Class 1 and 2 lands, areas of 60 to 70 percent Classe 1 and 2 lands, and the majority of Class 3 lands. Rural areas include some of the Region's Class 3 lands as well as Class 4 to 7 lands. It should be noted that as the Regional land use maps are on a relatively large scale, the local municipality's land use mapping was considered to be a more detailed reflection of Plan policies. However, where there was/is a major conflict between local and Regional Official Plans on a policy level, the Regional Plan takes precedent.

Sites **LF-1E**, **LF-3C** and **LF-9C** are located within the Good General-Agricultural designation. The following policies are of relevance:

> "In the unique and good general agricultural areas, the predominant use of land will be for agriculture of all types, including livestock operations. Compatible uses such as forestry and conservation of plant and wildlife are also permitted (Policy 6.A.6)."

> "Uses such as public utilities, communication and transportation facilities and public uses including waste disposal sites should preferably not be located in unique and good general agricultural areas. If such uses cannot reasonably be located outside of these areas, they should be located so as to minimize the effects on surrounding unique and good general agricultural lands, viable farm operations, and natural farm drainage (Policy 6.A.13)."

INDUSTRIAL

Site PI-27E is located within an area designated Industrial in the draft Niagara Falls Official Plan and therefore subject to the Industrial policies of the Regional Plan. These policies are very general in nature. There are no policies in the Industrial section which deal with the location of waste treatment facilities (Section 5.11-14).

SOLID WASTE DISPOSAL

The Regional Plan specifically provides for the co-ordination of Regional Plans for waste disposal systems with those of other government agencies (Policy 8.E.1).

> "The selection of all solid waste disposal sites will involve consideration of:
>
> a) The compatibility of the methods of operation with adjacent land uses;
>
> b) The nature of bedrock and soil conditions in order to reduce the likelihood of groundwater contamination; and
>
> c) Operational economics - transportation costs, maintenance, land prices, opportunity for future expansion, etc. (Policy 8.D.2)."
>
> "Site and rehabilitation plans will be developed prior to the use of a particular site for solid waste disposal. These plans should make provision for:
>
> a) The control of odour, vermin and other nuisances;
> b) The phasing of the site expansion;
> c) The ultimate use of the site;
> d) Landscaping and berms;
> e) Access; and
> f) A uniformly high standard of operation." (Policy 8.D.3).

CONCLUSION

The Regional Plan does not provide policies for industrial and hazardous waste treatment facilities as proposed by OWMC. For this reason, there are no specific policies which preclude the establishment of the OWMC facilities.

There are policies, however, which do provide some assistance in determining the compatibility of the OWMC facilities with the policies of the Regional Plan.

The protection of Good General-Agricultural Lands is a key element of the Regional Plan. Public uses should preferably not be located in these areas. However, if they cannot reasonably be located elsewhere, they should be located so as to minimize impacts on surrounding lands. While public uses would include the OWMC facilities, they are not mentioned or defined in the Plan.

SOURCES

Regional Municipality of Niagara, Regional Niagara Policy Plan, Office Consolidation (1981)

TOWN OF LINCOLN

STATUS OF OFFICIAL PLAN

The Official Plan of the Town of Lincoln was approved by the Minister in 1978. The Plan is to be reviewed and updated in 1985 to bring it into conformity with the Regional Plan.

The regional access route for candidate sites LF-3C and LF-9C passes through the Town of Lincoln at Vineland Station and Vineland, following Regional Road 24. Vineland and Vineland Station are the principal communities on the access road.

RELEVANT DESIGNATIONS

The Official Plan land use designations in this corridor are, from south to north:

- Rural
- Neighbourhood Residential

Rural

The predominant uses permitted in this category include agriculture, forestry and activities related to the conservation of soil and wildlife. It may include "facilities of various public works agencies" (Section 3, Subsection 3A).

Residential development is permitted under the Rural designation on a limited scale, and at low density (Section 3, Subsection B.ii). Lot sizes as small as 1 acre are permitted (Section 9.7, Subsection B).

Neighbourhood Residential

The Neighbourhood Residential designation permits a variety of residential densities, and institutional and commercial facilities (Section 3, Subsection 4A).

The access road through Vineland passes through this designation for a distance of almost two kilometres north from the base of the Niagara Escarpment (Schedule A).

The Neighbourhood Residential policies are to be read in conjunction with the Neighbourhood Plan, Schedule B and policies in Section 4. This section designates Vineland as a neighbourhood centred on the intersection of Regional Roads 24 and 81.

The Vineland Neighbourhood Plan boundary covers a much wider area than the Neighbourhood Residential designation, from the Niagara Escarpment to the QEW. The Town's planning staff indicate that the Neighbourhood boundary will be reduced in area to coincide with the limits of the Neighbourhood Residential designation when the Official Plan is next revised. The projected population capacity of Vineland is 8,708 (Schedule C).

ZONING BY-LAW

The Zoning By-law was not reviewed.

CONCLUSIONS

The Town of Lincoln Official Plan will not require amendment if a site is selected in the adjacent Township of West Lincoln. The Vineland section of the access route could prove to be a major planning issue considering the substantial additional population growth which is permitted along this access route.

SOURCES

Town of Lincoln, Official Plan as amended (1978)

CITY OF NIAGARA FALLS

A. CURRENTLY APPROVED OFFICIAL PLAN

STATUS

The Official Plan for the City of Niagara Falls which is currently in effect is a composite of the Plans covering the former City, the Village of Chippawa, and those parts of the Townships of Crowland, Humberstone and Willoughby which were combined in the restructuring of municipal boundaries which occurred when the Region of Niagara was formed in 1970. An office consolidation of these five Plans was prepared in 1974. The city staff are currently preparing a draft, consolidated Official Plan for the entire municipality.

Sites **P1-27E** and **LF-1E** are situated within that part of the Plan which was formerly the Official Plan for the Township of Crowland (Township of Crowland O.P.A. No. 6).

AGRICULTURAL/RURAL DESIGNATION

The two candidate sites and access routes are located within the Agricultural/Rural designation of the Township of Crowland's O.P.A. No. 6 (1961). This designation permits agricultural uses and a wide range of additional uses, including light manufacturing and heavy industry. These latter uses are subject to review of a number of considerations, as follows:

- adequacy of the Township road system
- availability and capacity of the water and sewer system.
- pollution of streams
- air pollution
- the possibility of further urbanization being required.

Permitted industrial uses do not include "yards or any uses of this nature" which are "objectionable by virtue of unsightliness, noise or smell." (Part 4, Section I (h)).

Public uses are permitted. Waste disposal facilities are not specifically addressed; it is implied that only roads and servicing are included in the term "public uses".

B. DRAFT OFFICIAL PLAN

STATUS

The City of Niagara Falls is currently preparing a consolidated Official Plan for the entire municipality. The consultants have utilized this new Plan as the basis for land use designations and policies, on the advice of city planning staff.

The following comments are based on the June, 1984, draft of the new Official Plan. The new plan had not then been approved by City Council or been reviewed by planning staff of Niagara Region.

RELEVANT DESIGNATIONS

The relevant designations for the two sites are:

- Industrial
- Agricultural

Industrial

Site P1-27E falls within an industrial designation.

Four major industrial categories are identified in Part II, Section 7. These are:

- Heavy
    - For industries which "generate offensive characteristics such as noise, odour, smoke, vibration, extensive outdoor storage, heavy transportion requirements and other characteristics which may have substantial impacts on adjacent uses".
- General
    - For industries "subject to performance standards limiting noxious characteristics to trucking and shipping facilities and outside storage uses."
- Light
- Prestige

The Land Use Plan shows only a single "Industrial" designation without differentiating the four sub-categories.

Heavy Industries are to be grouped together in the interior of industrial areas and well-separated from residential areas. Industries exposed to controlled access highways are generally restricted to Prestige Industrial uses to maintain a good impression of the community (Section 7.4).

Industries must comply with all provincial emission standards (Section 7.5).

Secondary Plans are required where industrial and residential lands are in close proximity to each other (Section 7.16).

New industrial development is to proceed in phased stages of which Phase 3 would involve the lands containing PI-27E (Section 7.13).

Agricultural

The proposed Plan differentiates between Agricultural and Rural designations. Site **LF-1E** falls within an Agricultural designation.

The Agricultural designation, as defined in Section 9, includes both unique and good general agricultural land. The predominant use is intended to be for agriculture, forestry and conservation. The Plan stipulates that:

> "Provided the intent of the policies in this section are maintained, compatible uses such as small scale commercial and industrial uses that support or are directly related to agriculture may be permitted by Zoning By-law amendment. Where appropriate, public utility uses, communication and transportation uses ... will also be permitted."
>
> "In Agriculturally designated areas, certain sites may exhibit low agricultural capability by virtue of soils, topography, environmental constraints, land use relationships and/or land ownership patterns. These sites may be considered for Rural development in accordance with the provisions of Part II, Section 10 provided there is no detrimental impact to the surrounding agricultural area. Proposals to amend the Zoning By-law shall be accompanied by a site specific report providing qualified evidence that the site is of a lower agricultural capability." (Section 9.8).

The Rural designation covers areas of poorer class soils. It permits opportunities for limited non-farm development such as:

- severances for non-farm residential development
- small-scale compatible commercial and industrial uses
- other uses if they:
  - are unable to be accommodated in urban areas
  - are desirable in the Rural area and compatible with existing uses
  - are in a suitable location
  - have adequate road access
  - have no physical site hazards
  - have adequate water and sewerage (Section 10).

OTHER SIGNIFICANT DESIGNATIONS/POLICIES

Highway Commercial

The east side of QEW, north and south of the Biggar Road - Lyons Creek Road interchange, is designated Highway Commercial. This is intended for uses serving the travelling public, such as hotels, motels, restaurants, auto service and auto-oriented uses. It excludes retail and tourist type commercial uses.

Resort Commercial

An area 1 km east of the previously-noted Highway Commercial area, and over 2 km east of **PI-27E**, is designated for Resort Commercial uses. This is intended to provide "tourist oriented services and facilities which provide opportunities for passive recreation and enjoyment of the natural environment in a resort type setting". It is intended for low intensity development complementing the major attractions and tourist services provided elsewhere in Tourist Commercial areas.

Estate Residential

There is no Estate Residential designation proposed in the Plan. Consent criteria are stringent (page 69).

PUBLIC WORKS

Extension of sanitary sewer and municipal water service beyond the urban area boundary is generally not permitted or considered in accordance with Regional policies (Section 5.2.7).

The Industrial lands in the Grassy Brook Community, which includes site **P1-27E**, are considered stage 3 (of 3 stages) for municipal servicing.

Development may be permitted in any stage if the developer is prepared to pay for external sewer and water services and road improvements (Section 5.2.1.2).

There are no specific policies related to waste disposal facilties.

SECONDARY PLANS

Secondary Plans are to be prepared for all communities (Page 61, Section 1.1) (Development applications will not, however, be deferred until completion of such plans).

A comprehensive Zoning By-law is to be enacted by Council to implement the Official Plan (page 63).

With the exception of certain zones, including most Industrial, Agricultural and Rural zones, virtually the entire city is to be placed under site plan control.

C. ZONING

STATUS

The applicable zoning for both sites is Township of Crowland By-law No. 1538.

LF-1E is also affected by amending By-law Nos. 82-20 and 85-129.

PERMITTED USES

Both sites are zoned RA-Rural Agricultural. By-law No. 82-20 had the effect of removing the industrial uses from the areas zoned as Rural Agricultural. As a result of an OMB decision on By-law No. 82-20, the **PI-27E** lands have been excluded from this By-law and, as such, had the provisions for industrial uses re-affirmed.

In addition, By-law No. 85-129 was passed on July 31, 1985 amending, among other By-laws, By-law No. 1538 of the former Township of Crowland as amended. In effect, By-law 85-129 further restricts the permitted uses on the site at **LF-1E** such that most non-agricultural uses are prohibited.

Additional uses are permitted in the area within which **PI-27E** is located. These include:

- a warehouse or distribution depot
- light manufacturing or assembly of manufactured products
- heavy industrial.

The effect of By-law 82-20 was to amend By-law 1538 by deleting the above-noted uses. However, when By-law 82-20 came before the Ontario Municipal Board for approval, the OMB approved the deletion of these uses except for the lands lying north of Biggar Road and east of Crowland Avenue, i.e. including site **P1-27E.**

Landfill and waste treatment facilities are not specifically permitted.

CONCLUSION

The present approved Official Plan would appear to permit the development of OWMC facilities at site **PI-27E.**

The Agricultural designation in the proposed Official Plan permits a public utility use. It is possible that an Official Plan amendment may not be required for OWMC facilities at site **LF-1E.** The Plan will also provide for the redesignation of lands to Rural if it can be demonstrated that they have low agricultural capability and no detrimental effects on the surrounding agricultural lands, and the Rural category will permit uses "unable to be accommodated in urban areas" under certain circumstances.

The proposed Industrial designation for site **PI-27E** would appear to permit OWMC type facilities subject to any further zoning amendments.

The consultants have been advised by City staff that the Industrial designation proposed in the new draft Official Plan for all the lands north of Biggar Avenue is being opposed by local residents who wish to see the designation limited to the sites occupied by existing industries. This is a major issue to be addressed by the Official Plan study.

Current zoning does not permit OWMC type facilities specifically, but the heavy industrial uses permitted on site **PI-27E** could be interpreted to include similar facilities.

SOURCES

City of Niagara Falls, Official Plan (1974)
City of Niagara Falls, Official Plan Update Draft (1984)
City of Niagara Falls, Zoning By-law No. 82-20 (1983)
City of Niagara Falls, Zoning By-law No. 85-129 (1985)
Township of Crowland, Official plan Amendment No. 6 (1961)
Township of Crowland, Zoning By-law #1538 (1958)
Township of Willoughby, Zoning By-law No. 395 (1966)
City of Welland, Official Plan (1975)
City of Welland, Zoning By-law No. 2667 (1982)

TOWN OF PELHAM

STATUS

The present Official Plan was approved in 1974. Official Plan amendment No. 7, an amendment to bring the plan into conformity with the Regional Niagara Plan, was approved, in part, on March 8, 1985 by the Minister.

GENERAL POLICIES

The Official Plan expresses a concern about urbanization of the rural area and states a major objective to be the protection of rural areas against urban encroachment.

The regional access routes for sites **LF-3C** and **LF-9C** follows Regional Road 24, along the west boundary of the town. This route abuts a Rural designation.

RURAL DESIGNATION

Single family residences are permitted in the Rural area, subject to a number of restrictions. Generally, lots are to be no smaller than .4 ha in size and are not to contribute to scattered or ribbon development (Section 1.12.3.9).

ZONING BY-LAW

The Zoning By-law was not reviewed.

CONCLUSION

The Official Plan for the Town of Pelham does not appear to present planning obstacles to the use of Regional Road 24 as an access route to proposed OWMC sites in the Township of West Lincoln.

SOURCES

Town of Pelham, The Official Plan of the Pelham Planning Area (1974)
Town of Pelham, Official Plan Amendment No. 7 (1985)

TOWNSHIP OF WEST LINCOLN

STATUS

The Official Plan was approved by the Minister in 1979. The Plan is to be reviewed in 1985 and will be brought into conformity with the Niagara Region Official Plan at that time.

RELEVANT DESIGNATIONS

The Official Plan designates most of the municipality as Rural. No distinction is made between rural and agricultural designations.

All of the watercourse valleys and floodplains, even very minor streams, are designated as Hazard Lands.

One relevant designation in the rural area of the Township is Highway Commercial.

An Official Plan amendment in 1983 established the boundaries of 13 Hamlet Communities throughout the township.

The two candidate sites are affected by the above - noted designations as follows:

- Both sites are basically in Rural designations with some Hazard Land (Beaver Creek crosses the top part of **LF-3C**).
- **LF-9C** has a small amount of Highway Commercial designation at one corner but not on site.
- **LF-9C** is approximately 950 metres from an area designated for a Recreational Trailer Park.
- The local extension of the regional access route passes through the designated Hamlet of Bismarck on the way to **LF-3C**.

Rural

The predominant uses in this category are agriculture, forestry and activities connected with conservation of soil and wildlife. Some other uses, including "facilities of various public utility agencies and small-scale industrial uses" are permitted if they are related to and serve the surrounding agricultural area, such as farm implement dealers (Section 4(5)(a)).

Although the land use schedule does not distinguish between rural and agricultural uses, the policies emphasize that the retention of good agricultural land)mainly Class 1 and 2 soils Section 4(5)(b)(i) is a priority.

Policies are set out relating to Waste Disposal Sites in the Rural area. The policies require:

- amendment to the Official Plan for facilities not primarily serving the township.
- an agreement with the township
- approval of the Ministry of Environment considering:
    - public health and welfare
    - space requirements
    - topography
    - soil conditions
    - present and future land use, on site and surrounding area
    - accessibility
    - haul distances
    - drainage and protection against run-off
    - costs of site preparation (Section 4 (5)(6)(v)).

Non-farm residential uses are permitted only on rural lands of lower capability soils (Section 4(5)(ii)).

Hazard Lands

The boundaries of the Hazard Lands are for use as guidelines, subject to detailed flood plain mapping by the Niagara Peninsula Conservation Authority (NPCA).

Hamlet Community

An Official Plan amendment in 1983 established the boundaries of 13 Hamlet Communities in West Lincoln. The regional access route to **LF-3C** passes through Bismarck.

The Hamlet Community designation, which applies to Bismarck, permits single family dwellings and services uses such as retail, agriculturally-oriented industry, schools, parks, churches, doctors' offices, etc. Target populations have not been assigned to the Hamlets. Site **LF-9C** is located just over 3 km east of Bismarck.

PROCESS

The policies for Waste Disposal Sites are discussed under the Rural Designation section. In summary, an amendment is required to the Official Plan and an agreement with the municipality to permit these facilities.

ZONING

The applicable Zoning By-law for both sites is By-law 79-14 of the Township of West Lincoln. Both sites are zoned Agricultural A2.

This category permits primarily agricultural uses. The general provisions of the by-law, which apply to all zones, prohibits "dumping of industrial by-products of any kind" unless specifically permitted in the by-law. It also prohibits uses which are obnoxious by reason of:

- noise or vibration; or
- emission of gas, fumes, smoke, dust or objectionable odour; or
- unsightly storage; or
- any combination of these characteristics

Industrial M2 Zone

A number of locations scattered throughout the rural areas of the Township are zoned Industrial M2. This zoning permits:

"Industrial, manufacturing, storage, servicing and processing by, or on behalf of a Municipal, Provincial or Federal Government or Utility agency, including facilities for the treatment, pumping and storage of water, facilities for the pumping and treatment of sewage, work yards, waste disposal areas and public incinerators." (Section 24.1).

CONCLUSIONS

The Official Plan of the Township of West Lincoln will require amendment for an OWMC "waste disposal site" in the rural area, as the facility will serve an area wider than the Township.

The criteria for development of such facilities are left largely to the Ministry of the Environment.

The present policies of the Official Plan would not appear to be major obstacles to development of OWMC facilities.

The facility would not be a permitted use in the Zoning By-law. The existing Industrial M2 Zone category may be an appropriate zone, possibly with some rewording to permit waste treatment facilities.

SOURCES

Township of West Lincoln, Official Plan of the West Lincoln Planning Area (1979)
Township of West Lincoln, Zoning By-law No. 79-14 as amended (1982)

PARKWAY BELT WEST PLAN

PLAN STATUS

The Parkway Belt West Plan was initiated by the Provincial Government in 1973 as a response to the increasing pressures of urban growth in the Toronto-Hamilton corridor.

The Plan places significant constraints on urban development within its area of control. In certain areas, however, it permits urban uses, including industry. It has been examined in this report because of the proximity of two sites, **PI-1N** and **PI-13N**, to its boundary.

The goals of the Parkway Belt West Plan are as follows:

- to link urban communities through a planned system of multi-use corridors for essential services, such as highways, hydro transmission lines, rapid transit routes and pipelines, and to minimize the impact resulting from their construction;
- to maintain the separateness of the individual communities by defining the boundaries of growing urban areas;
- to provide a system of open space and recreation areas; and
- to remove land which might be required for future linear facilities (Section 2).

The Parkway Belt West Plan was passed into law in 1978 by the Province. The Plan and its policies have subsequently been incorporated into the Official Plans of the Regions of Halton and Hamilton-Wentworth and the draft Official Plan of Peel, and into the Official Plans of most of the area municipalities which it affects.

The Parkway Belt West Plan is now under review by the Ministry of Municipal Affairs. It is anticipated that proposed revisions to the plan will be announced in 1985.

Many of the objectives of the Plan with respect to service corridors have now been met. The urban separator objectives have been incorporated into regional and area municipality Official Plans and in a number of municipalities including Brampton, Vaughan, Oakville and Milton, detailed regulation is being transferred to municipal zoning by-laws.

RELEVANT DESIGNATIONS

The lands within the Parkway Belt are covered by a number of designations. These fall into two main groups, i.e.

1. Public Use Area
   - Public Open Space and Buffer
   - Utility
   - Electric Power Facility
   - Road
   - Inter-urban Transit

2. Complementary Use Area
   - General Complementary Use Area
   - Special Complementary Use Area

The principal effects of the Parkway Belt are to prevent the designation or development of urban land uses in those parts of the Parkway Belt being reserved for future utility corridors and highways or for parks and recreation (Public Use Areas), and to limit uses in the remainder to certain low-density uses which are deemed compatible with the Parkway Belt (Complementary Use Areas).

Public uses, such as roads, utilities, and their accessory facilities, are permitted in the Complementary Use Areas. New industrial uses are not permitted in General Complementary Use Areas except in infill situations. Industrial uses are permitted in certain Special Complementary Use Areas in the Parkway Belt, eg. in the municipalities of Oakville and Brampton. None of the sections of the Parkway Belt which permit industrial uses are near to OWMC candidate sites. Other uses, such as low density residential, are permitted in specified Special Complementary Use Areas, none of which are near to OWMC candidate sites.

In the Town of Milton, a municipal arena, fire department substation and utility offices have been located within the Parkway Belt.

The controls of the Parkway Belt do not extend beyond the designated limits of the Parkway Belt.

The provincial ministries and utilities responsible for the acquisition of rights-of-way for transportation, transmission lines and pipelines have, to date, acquired an estimated 75% of all the land needed for these linear facilities.

With provincial assistance, approximately 1 600 ha of public open space land within the Parkway Belt could be incorporated into local municipal recreation plans. Provincial parks and conservation authority parks have similarly been augmented.

The role of the Parkway Belt as an urban separator, particularly with respect to a proposed "second tier" of communities along the Toronto-Hamilton corridor, has been much less significant. Lower levels of urban growth in the region and more compact densities of development have reduced concerns about urban sprawl.

CONCLUSION

None of the seven*(7) candidate sites are within the Parkway Belt proper. Site **PI-1N** abuts a General Complementary Use (for private/private recreation access to valley lands) within the Parkway Belt. **PI-13N** is north and east of a Road Link and General Complementary Use Area as well as north of an Open Space and Buffer Area. Neither designation would have a significant effect on the suitability of these sites for OWMC uses.

---

* LF-2N excluded from list of candidate sites during Phase 4A basic acceptability analysis.

SOURCES

Ministry of Municipal Affairs and Housing, The Parkway Belt West Plan (1978)

NIAGARA ESCARPMENT PLAN

PLAN STATUS

In 1973 the Provincial Government adopted the Niagara Escarpment Planning and Development Act to provide a legal framework for the conduct of studies leading to a plan for the Niagara Escarpment and lands in its vicinity. On June 12, 1985 this process culminated in the adoption of the Niagara Escarpment Plan by an Order in Council.

The objectives of the Niagara Escarpment Plan are as follows:

- to protect unique ecologic and historic areas;
- to maintain and enhance the quality and character of natural streams and water supplies;
- to provide adequate opportunities for outdoor recreation;
- to maintain and enhance the open landscape character of the Niagara Escarpment in so far as possible, by such means as compatible farming or forestry and by preserving the natural scenery;
- to ensure that all new development is compatible with the purpose of the Act;
- to provide for adequate public access to the Niagara Escarpment; and
- to support municipalities within the Niagara Escarpment Planning Area in their exercise of the planning functions confered upon them by the Planning Act (Section 8 Niagara Escarpment Planning and Development Act).

Where there is conflict between the provisions of the Niagara Escarpment Plan and the local Official Plan and/or Zoning By-law, the Niagara Escarpment Plan shall prevail.

RELEVANT DESIGNATIONS

The effect of these land use designations on OWMC's site selection process is considered minimal as only the site vicinity of **LF-4N** encompasses lands under the jurisdiction of the Niagara Escarpment Commission. Specifically, three designations have relevance to **LF-4N**, that is, the Escarpment Natural Area, the Escarpment Protection Area and the Escarpment Rural Area.

The nearest designation to the site at **LF-4N** is the Escarpment Rural Area at some 600 metres from the site boundary. Included among the objectives of the Escarpment Rural Area are:

- to maintain scenic values of lands in the vicinity of the Escarpment;
- to maintain the open landscape character;
- to encourage agriculture and forestry and to provide for compatible low-density rural land uses; and
- to provide a buffer for ecologically sensitive areas (Section 2.4).

The Escarpment Rural Area recognizes utility facilities as permitted uses.

The Escarpment Natural Area involves similar objectives but with a greater emphasis on the maintenance or enhancement of Escarpment natural features. Again, utility facilities are a permitted use but with the proviso that they be "essential".

Thirdly, the Escarpment Protection Area has similar objectives to those of the Rural and Natural Areas. Additionally, the policy aims to protect prominent visual and environmental features. Utility facilities are also a permitted use under the Escarpment Protection Area designation.

With respect to land use on the site of **LF-4N**, the effect of these designations is neglibible as the proposed site is outside of the lands designated under the Niagara Escarpment Plan. However, the visual compatibility of an OWMC type facility with the Niagara Escarpment should be considered as an important issue, although peripheral to the land use assessment.

CONCLUSION

On balance, the existence of the Niagara Escarpment Plan and its attendant provisions has a minimal adverse effect on the candidacy of the **LF-4N** site from a land use perspective. No other candidate sites under consideration by OWMC are affected by the Plan.

SOURCES

Provincial Secretary for Resources Development, Niagara Escarpment Plan (1984)